MITSUBISHI ELECTRIC

SPLIT-TYPE AIR CONDITIONERS

*Changes for the Better*

**Revision B:**
- MUZ-D•NA-[1]/-[U2] and MUY-D•NA-[1] have been corrected.

Please void OBH502 REVISED EDITION-A.

# OUTDOOR UNIT
# SERVICE MANUAL

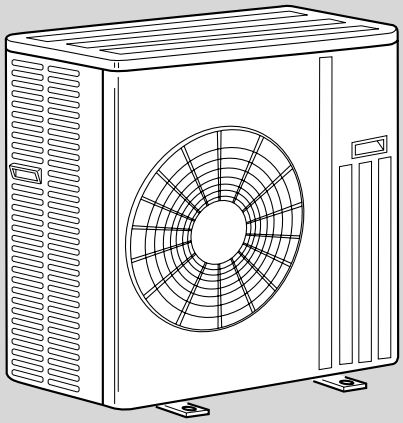
HFC utilized
R410A

**No. OBH502**
**REVISED EDITION-B**

## Models

**MUZ-D30NA/-[1]/-[U1]/-[U2]**
**MUZ-D36NA/-[1]/-[U1]/-[U2]**
**MUY-D30NA/-[1]**
**MUY-D36NA/-[1]**

**Indoor unit service manual**
**MSZ-D•NA Series (OBH501)**
**MSY-D•NA Series (OBH501)**



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**PARTS CATALOG (OBB502)**

**NOTE:**
RoHS compliant products have <G> mark on the spec name plate.

Mr.SLIM™

## Revision A:

• 3. SPECIFICATION has been corrected.

## Revision B:

• MUZ-D•NA-1/-U2 and MUY-D•NA-1 have been corrected.

# 1 TECHNICAL CHANGES

**MUZ-D30NA MUZ-D30NA-U1**
**MUZ-D36NA MUZ-D36NA-U1**
**MUY-D30NA**
**MUY-D36NA**

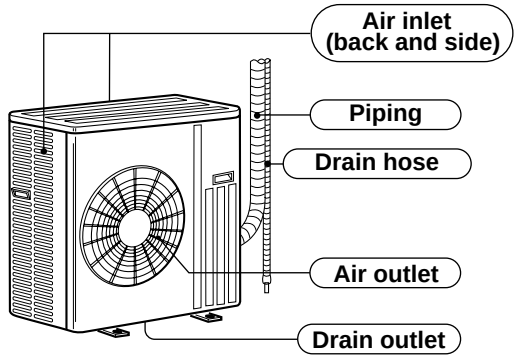
1. New model

**MUZ-D30NA → MUZ-D30NA-1 MUZ-D30NA-U1 → MUZ-D30NA-U2**
**MUZ-D36NA → MUZ-D36NA-1 MUZ-D36NA-U1 → MUZ-D36NA-U2**
**MUY-D30NA → MUY-D30NA-1**
**MUY-D36NA → MUY-D36NA-1**

1. Wiring diagram has been changed.
2. Fan motor has been changed.

# 2 PART NAMES AND FUNCTIONS

**MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA**



# 3 SPECIFICATION

| Item \ Model | | | MSZ-D30NA | MSY-D30NA | MSZ-D36NA | MSY-D36NA |
|---|---|---|---|---|---|---|
| Capacity Rated (Minimum ~ Maximum) | Cooling ❄1 | Btu/h | 30,700 (9,800 ~ 30,700) | 30,700 (9,800 ~ 30,700) | 32,000/33,200 (9,800 ~ 32,000) / (9,800 ~ 33,200) | 33,200/34,600 (9,800 ~ 33,200) / (9,800 ~ 34,600) |
| | Heating 47 ❄1 | | 32,600 (8,700 ~ 34,000) | — | 35,200 (8,700 ~ 36,000) | — |
| Capacity | Heating 17 ❄2 | Btu/h | 20,800 | — | 22,800 | — |
| Power consumption Rated (Minimum ~ Maximum) (TOTAL) | Cooling ❄1 | W | 3,850 (620 ~ 3,850) | 3,380 (620 ~ 3,380) | 4,140/4,360 (620 ~ 4,140) / (620 ~ 4,360) | 4,210/4,240 (620 ~ 4,210) / (620 ~ 4,240) |
| | Heating 47 ❄1 | | 3,360 (520 ~ 3,600) | — | 3,840 (520 ~ 4,100) | — |
| Power consumption | Heating 17 ❄2 | W | 2,620 | — | 3,000 | — |
| EER ❄1 [SEER] ❄3 | Cooling | | 8.0 [14.5] | 9.1 [16.0] | 7.7/7.6 [14.5] | 7.9/8.2 [15.1] |
| HSPF IV(V) ❄4 | Heating | | 8.2 (6.7) | — | 8.2 (6.7) | — |
| COP | Heating ❄1 | | 2.84 | — | 2.69 | — |
| Outdoor unit model | | | **MUZ-D30NA** | **MUY-D30NA** | **MUZ-D36NA** | **MUY-D36NA** |
| Power supply V , phase , Hz | | | 208/230 , 1 , 60 | | | |
| Max. fuse size (time delay) | | A | 25 | | | |
| Min. circuit ampacity | | A | 21 | | | |
| Fan motor | | F.L.A | 0.93 | | | |
| Compressor | Model | | TNB220FMCHT | | | |
| | | R.L.A | 16 | | | |
| | | L.R.A | 20 | | | |
| | Refrigeration oil | cc | 870 (NEO22) | | | |
| Refrigerant control | | | Linear expansion valve | | | |
| Sound level ❄1 | Cooling | dB(A) | 55 | 55 | 56 | 56 |
| | Heating | | 57 | — | 57 | — |
| Defrost method | | | Reverse cycle | — | Reverse cycle | — |
| Dimensions | W | in. | 33-1/16 | | | |
| | D | | 13 | | | |
| | H | | 33-7/16 | | | |
| Weight | | lb. | 141 | 126 | 141 | 126 |
| External finish | | | Munsell 3Y 7.8/1.1 | | | |
| Remote controller | | | Wireless type | | | |
| Control voltage (by built-in transformer) | | | 12 - 24 VDC | | | |
| Refrigerant piping | | | Not supplied | | | |
| Refrigerant pipe size (Min. wall thickness) | Liquid | in. | 3/8 (0.0315) | | | |
| | Gas | | 5/8 (0.0394) | | | |
| Connection method | Indoor | | Flared | | | |
| | Outdoor | | | | | |
| Between the indoor & outdoor units | Height difference | ft. | 50 | | | |
| | Piping length | | 100 | | | |
| Refrigerant charge (R410A) | | | 4 lb. 10 oz. | 4 lb. | 4 lb. 10 oz. | 4 lb. |

**NOTE**: Test conditions are based on ARI 210/240.

❄1: Rating conditions (Cooling) — Indoor: 80˚FDB, 67˚FWB, Outdoor: 95˚FDB, (75˚FWB) Rated frequency
(Heating) — Indoor: 70˚FDB, 60˚FWB, Outdoor: 47˚FDB, 43˚FWB Rated frequency

❄2: (Heating) — Indoor: 70˚FDB, 60˚FWB, Outdoor: 17˚FDB, 15˚FWB Maximum frequency

## Test condition

⁂3,⁂4

| ARI | Mode | Test | Indoor air condition (°F) | | Outdoor air condition (°F) | |
|---|---|---|---|---|---|---|
| | | | Dry bulb | Wet bulb | Dry bulb | Wet bulb |
| | SEER (Cooling) | "A" Cooling Steady State at rated compressor Speed | 80 | 67 | 95 | (75) |
| | | "B-2" Cooling Steady State at rated compressor Speed | 80 | 67 | 82 | (65) |
| | | "B-1" Cooling Steady State at minimum compressor Speed | 80 | 67 | 82 | (65) |
| | | Low ambient Cooling Steady State at minimum compressor Speed | 80 | 67 | 67 | (53.5) |
| | | Intermediate Cooling Steady State at Intermediate compressor Speed ⁂5 | 80 | 67 | 87 | (69) |
| | HSPF (Heating) | Standard Rating-Heating at rated compressor Speed | 70 | 60 | 47 | 43 |
| | | Low temperature Heating at rated compressor Speed | 70 | 60 | 17 | 15 |
| | | Max temperature Heating at minimum compressor Speed | 70 | 60 | 62 | 56.5 |
| | | High temperature Heating at minimum compressor Speed | 70 | 60 | 47 | 43 |
| | | Frost Accumulation at rated compressor Speed | 70 | 60 | 35 | 33 |
| | | Frost Accumulation at Intermediate compressor Speed ⁂5 | 70 | 60 | 35 | 33 |

⁂5: At Intermediate compressor Speed
=("Cooling rated compressor speed" - "minimum compressor speed") / 3 + "minimum compressor speed".

**OPERATING RANGE**

(1) POWER SUPPLY

| | Rated voltage | Guaranteed voltage (V) |
|---|---|---|
| Outdoor unit | 208/230 V<br>1 phase<br>60 Hz | Min. 187 — 208 — 230 — Max. 253 |

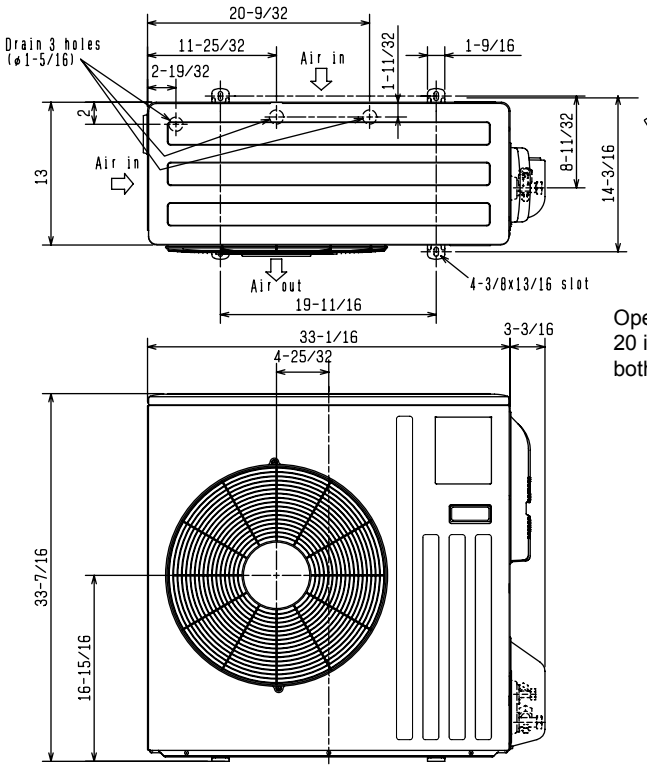
(2) OPERATION

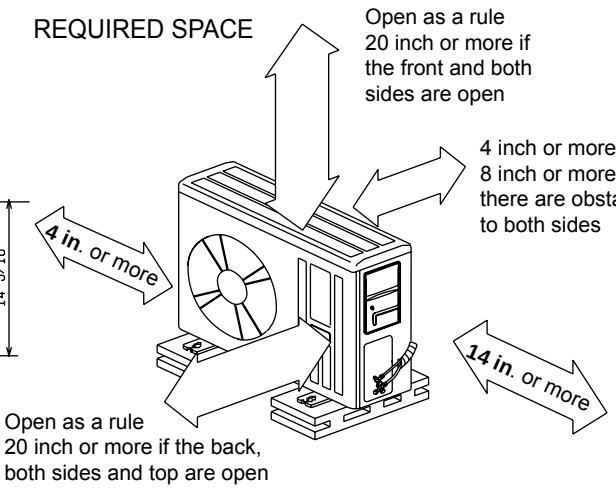
| Mode | Condition | Intake air temperature (°F) | | | |
|---|---|---|---|---|---|
| | | Indoor | | Outdoor | |
| | | DB | WB | DB | WB |
| Cooling | Standard temperature | 80 | 67 | 95 | — |
| | Maximum temperature | 90 | 73 | 115 | — |
| | Minimum temperature | 67 | 57 | 14 | — |
| | Maximum humidity | 78% | | — | |
| Heating | Standard temperature | 70 | 60 | 47 | 43 |
| | Maximum temperature | 80 | 67 | 75 | 65 |
| | Minimum temperature | 70 | 60 | 14 | 13 |

# 4 OUTLINES AND DIMENSIONS

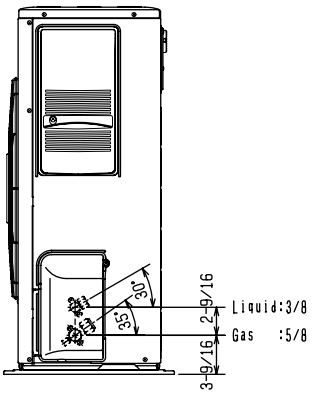
## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

**Unit: inch**



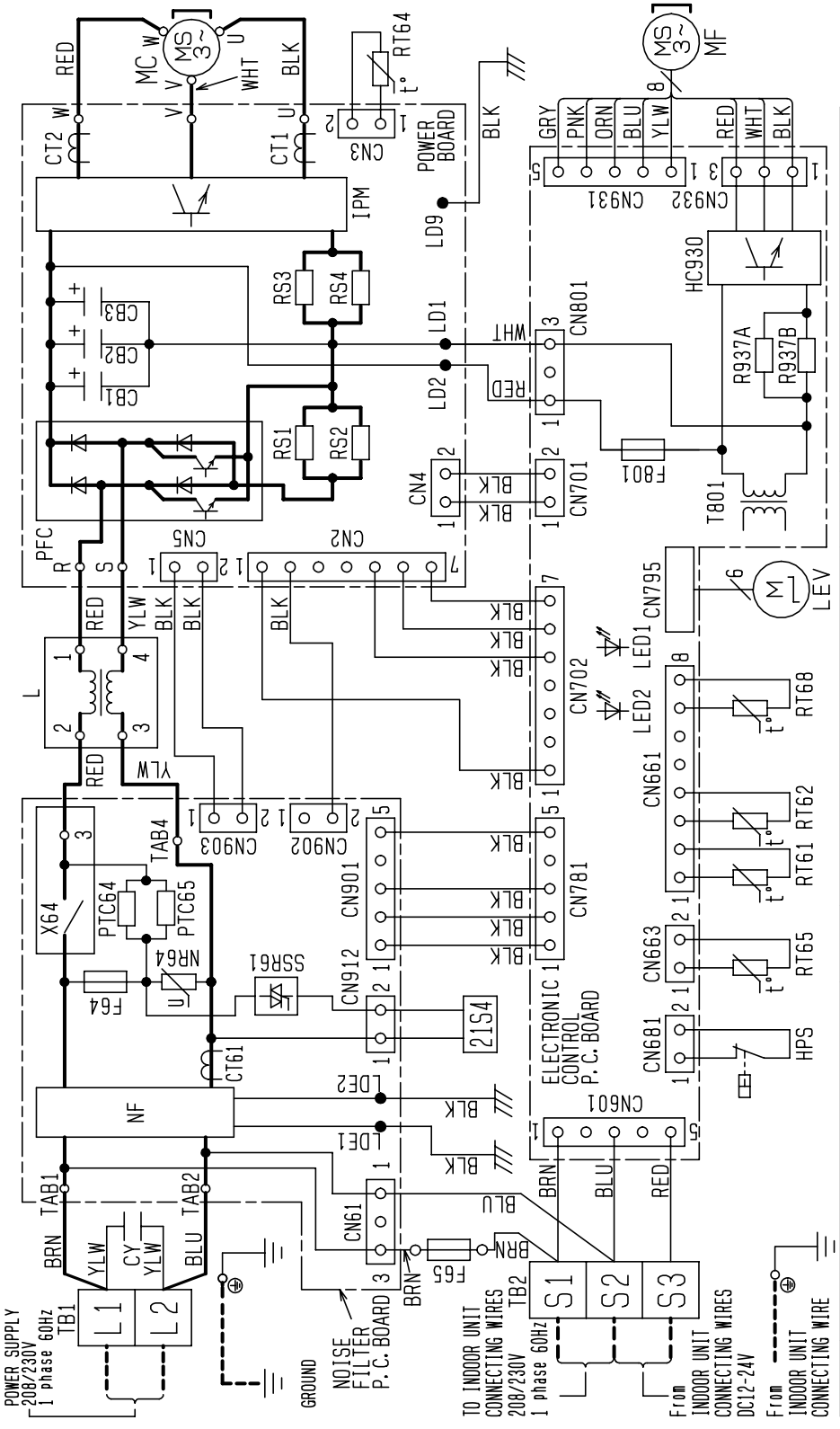




Open as a rule
20 inch or more if the back,
both sides and top are open



# 5 WIRING DIAGRAM

## MUZ-D30NA MUZ-D30NA-U1 MUZ-D36NA MUZ-D36NA-U1



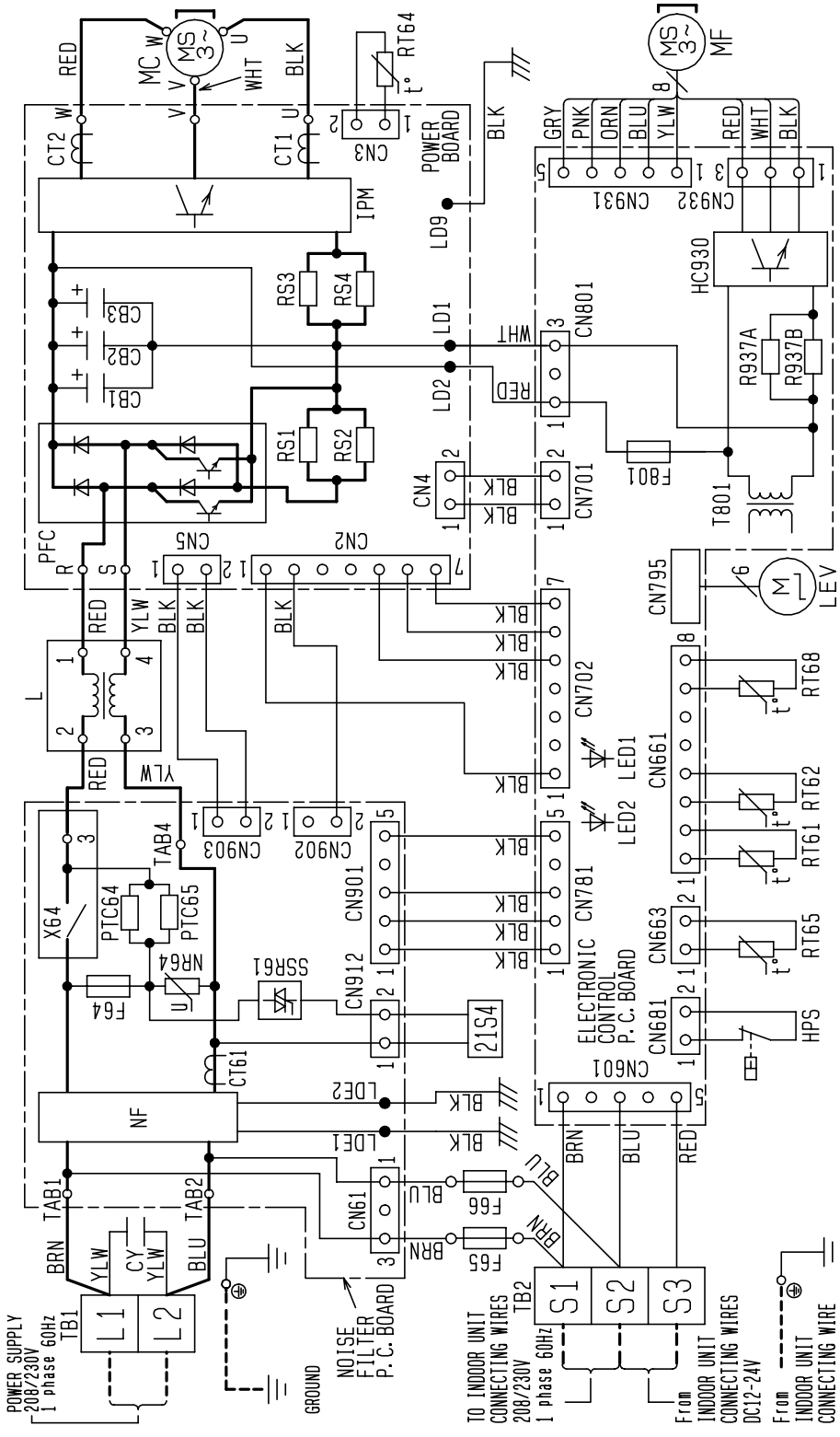

| SYMBOL | NAME |
|---|---|
| CB1~3 | SMOOTHING CAPACITOR |
| CT1,2 | CURRENT TRANSFORMER |
| CT61 | CURRENT TRANSFORMER |
| CY | CAPACITOR |
| F64 | FUSE(T2AL250V) |
| F65 | FUSE(T6.3AL250V) |
| F801 | FUSE(T3.15AL250V) |
| HC930 | INTELLIGENT POWER MODULE |
| HPS | HIGH PRESSURE SWITCH |
| IPM | INTELLIGENT POWER MODULE |

| SYMBOL | NAME |
|---|---|
| L | REACTOR |
| LEV | EXPANSION VALVE |
| MC | COMPRESSOR |
| MF | FAN MOTOR |
| NF | NOISE FILTER |
| NR64 | VARISTOR |
| PFC | POWER FACTOR CONTROLLER |
| RS1~4 | RESISTOR |
| RT61 | DEFROST THERMISTOR |
| RT62 | DISCHARGE TEMP. THERMISTOR |

| SYMBOL | NAME |
|---|---|
| RT64 | FIN TEMP. THERMISTOR |
| RT65 | AMBIENT TEMP. THERMISTOR |
| RT68 | OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR |
| PTC64, 65 | RESISTOR |
| R937A, B | RESISTOR |
| SSR61 | SOLENOID COIL RELAY |
| TB1, 2 | TERMINAL BLOCK |
| T801 | SWITCHING TRANSFORMER |
| X64 | RELAY |
| 21S4 | REVERSING VALVE SOLENOID COIL |

NOTES 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only(for field wiring).
3. Symbols below indicate.
□□ : Terminal block

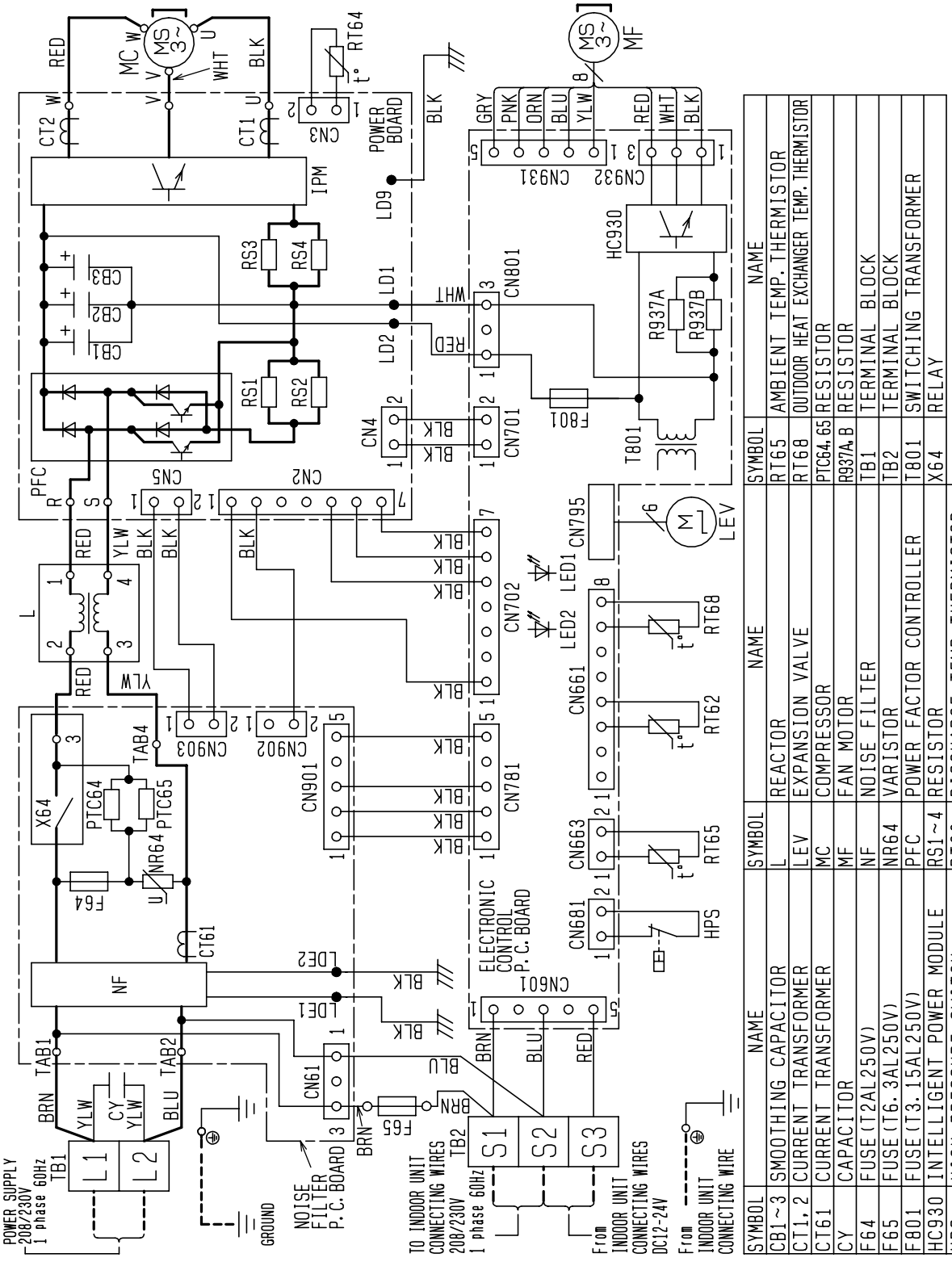
## MUZ-D30NA-1 MUZ-D30NA-U2 MUZ-D36NA-1 MUZ-D36NA-U2




| SYMBOL | NAME | SYMBOL | NAME | SYMBOL | NAME |
|---|---|---|---|---|---|
| CB1~3 | SMOOTHING CAPACITOR | L | REACTOR | RT64 | FIN TEMP.THERMISTOR |
| CT1,2 | CURRENT TRANSFORMER | LEV | EXPANSION VALVE | RT65 | AMBIENT TEMP.THERMISTOR |
| CT61 | CURRENT TRANSFORMER | MC | COMPRESSOR | RT68 | OUTDOOR HEAT EXCHANGER TEMP.THERMISTOR |
| CY | CAPACITOR | MF | FAN MOTOR | PTC64,65 | RESISTOR |
| F64 | FUSE(T2AL250V) | NF | NOISE FILTER | R937A,B | RESISTOR |
| F65,F66 | FUSE(T6.3AL250V) | NR64 | VARISTOR | SSR61 | SOLENOID COIL RELAY |
| F801 | FUSE(T3.15AL250V) | PFC | POWER FACTOR CONTROLLER | TB1,2 | TERMINAL BLOCK |
| HC930 | INTELLIGENT POWER MODULE | RS1~4 | RESISTOR | T801 | SWITCHING TRANSFORMER |
| HPS | HIGH PRESSURE SWITCH | RT61 | DEFROST THERMISTOR | X64 | RELAY |
| IPM | INTELLIGENT POWER MODULE | RT62 | DISCHARGE TEMP.THERMISTOR | 21S4 | REVERSING VALVE SOLENOID COIL |

NOTES 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only(for field wiring).
3. Symbols below indicate.
□□ :Terminal block

## MUY-D30NA MUY-D36NA



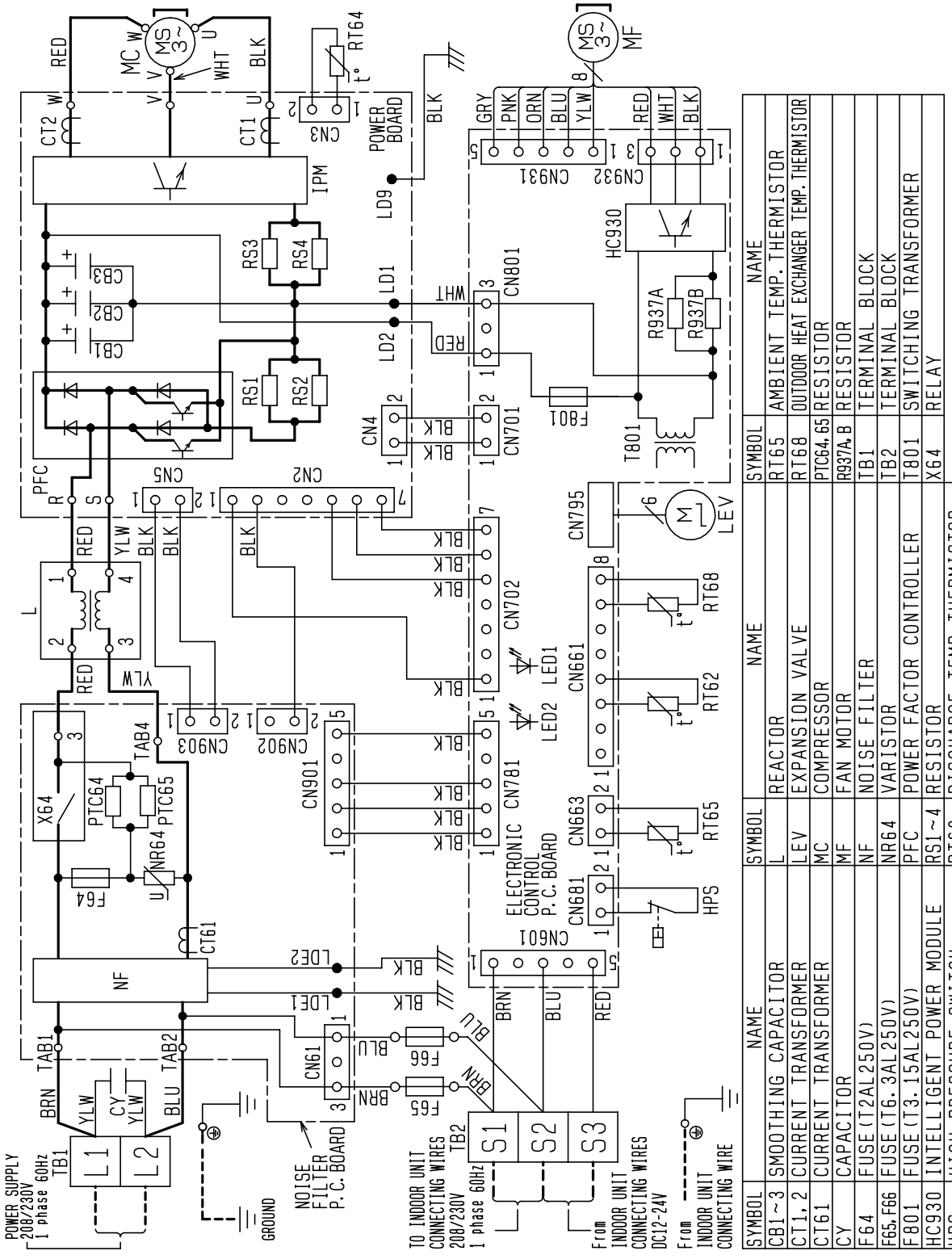

| SYMBOL | NAME |
|---|---|
| CB1~3 | SMOOTHING CAPACITOR |
| CT1, 2 | CURRENT TRANSFORMER |
| CT61 | CURRENT TRANSFORMER |
| CY | CAPACITOR |
| F64 | FUSE (T2AL250V) |
| F65 | FUSE (T6.3AL250V) |
| F801 | FUSE (T3.15AL250V) |
| HC930 | INTELLIGENT POWER MODULE |
| HPS | HIGH PRESSURE SWITCH |
| IPM | INTELLIGENT POWER MODULE |

| SYMBOL | NAME |
|---|---|
| L | REACTOR |
| LEV | EXPANSION VALVE |
| MC | COMPRESSOR |
| MF | FAN MOTOR |
| NF | NOISE FILTER |
| NR64 | VARISTOR |
| PFC | POWER FACTOR CONTROLLER |
| RS1~4 | RESISTOR |
| RT62 | DISCHARGE TEMP. THERMISTOR |
| RT64 | FIN TEMP. THERMISTOR |

| SYMBOL | NAME |
|---|---|
| RT65 | AMBIENT TEMP. THERMISTOR |
| RT68 | OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR |
| PTC64, 65 | RESISTOR |
| R937A, B | RESISTOR |
| TB1 | TERMINAL BLOCK |
| TB2 | TERMINAL BLOCK |
| T801 | SWITCHING TRANSFORMER |
| X64 | RELAY |

NOTES 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only(for field wiring).
3. Symbols below indicate.
□□□ :Terminal block

## MUY-D30NA-[1] MUY-D36NA-[1]



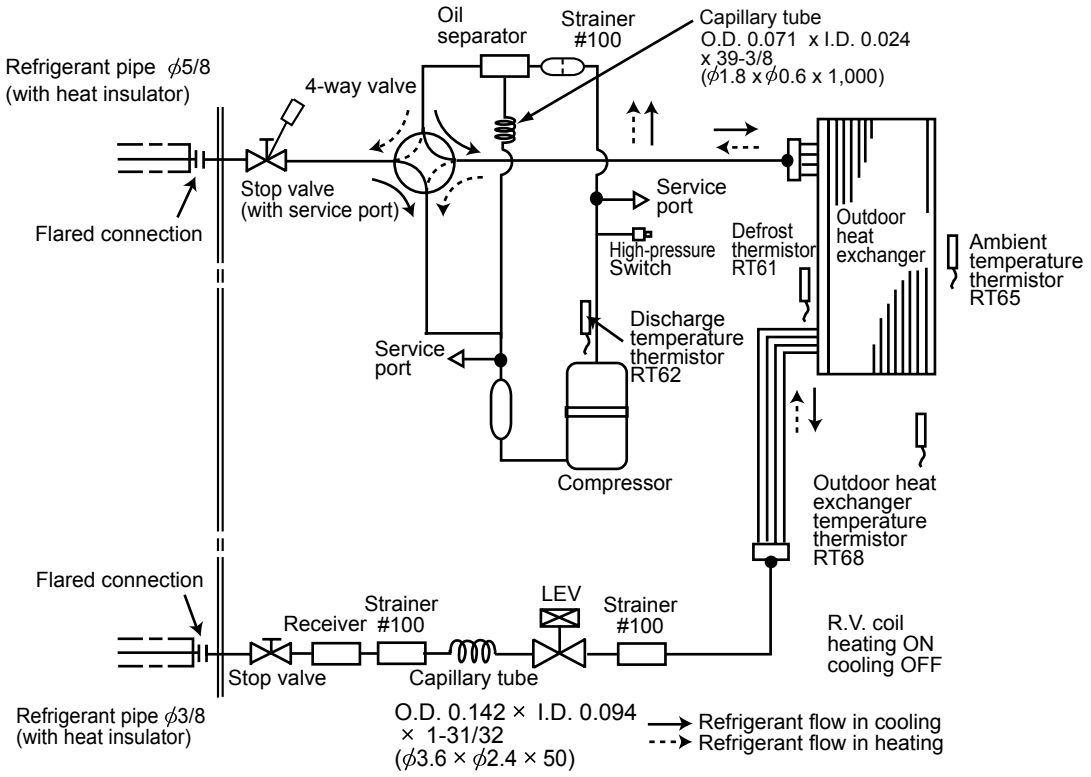

| SYMBOL | NAME | SYMBOL | NAME | SYMBOL | NAME |
|---|---|---|---|---|---|
| CB1~3 | SMOOTHING CAPACITOR | L | REACTOR | RT65 | AMBIENT TEMP. THERMISTOR |
| CT1, 2 | CURRENT TRANSFORMER | LEV | EXPANSION VALVE | RT68 | OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR |
| CT61 | CURRENT TRANSFORMER | MC | COMPRESSOR | PTC64, 65 | RESISTOR |
| CY | CAPACITOR | MF | FAN MOTOR | R937A, B | RESISTOR |
| F64 | FUSE(T2AL250V) | NF | NOISE FILTER | TB1 | TERMINAL BLOCK |
| F65, F66 | FUSE(T6. 3AL250V) | NR64 | VARISTOR | TB2 | TERMINAL BLOCK |
| F801 | FUSE(T3. 15AL250V) | PFC | POWER FACTOR CONTROLLER | T801 | SWITCHING TRANSFORMER |
| HC930 | INTELLIGENT POWER MODULE | RS1~4 | RESISTOR | X64 | RELAY |
| HPS | HIGH PRESSURE SWITCH | RT62 | DISCHARGE TEMP. THERMISTOR | | |
| IPM | INTELLIGENT POWER MODULE | RT64 | FIN TEMP. THERMISTOR | | |

NOTES 1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only(for field wiring).
3. Symbols below indicate.
□□ :Terminal block

# 6 REFRIGERANT SYSTEM DIAGRAM

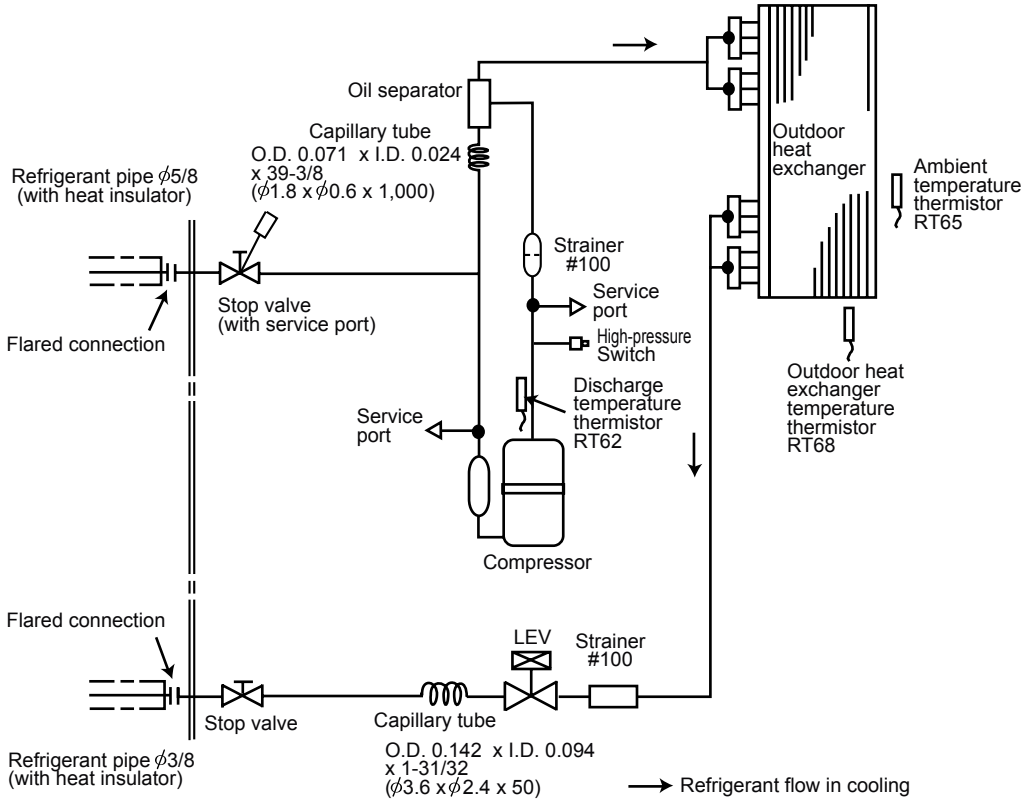
## MUZ-D30NA MUZ-D36NA

**Unit: inch**



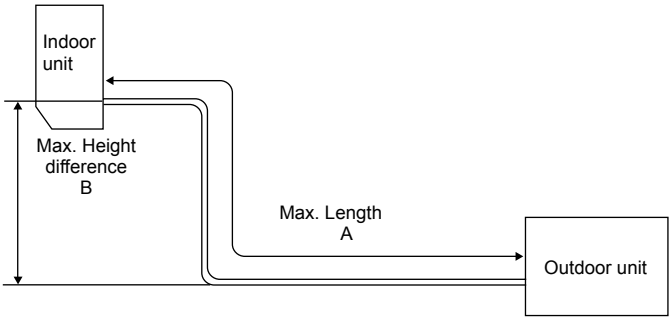

## MUY-D30NA MUY-D36NA

**Unit: inch**



## MAX. REFRIGERANT PIPING LENGTH and MAX. HEIGHT DIFFERENCE

| Model | Refrigerant piping: ft. | | Piping size O.D: in. | |
|---|---|---|---|---|
| | Max. Length A | Max. Height difference B | Gas | Liquid |
| **MUZ-D30NA**<br>**MUZ-D36NA**<br>**MUY-D30NA**<br>**MUY-D36NA** | 100 | 50 | 5/8 | 3/8 |




## ADDITIONAL REFRIGERANT CHARGE (R410A: oz.)

Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

| Model | Outdoor unit precharged | Refrigerant piping length (one way): ft. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| **MUZ-D30NA**<br>**MUZ-D36NA** | 4 lb. 10 oz. | 0 | 2.96 | 8.88 | 14.80 | 20.72 | 26.64 | 32.56 | 38.48 | 44.40 |

Calculation: X oz. = 2.96/5 oz. / ft. × (Refrigerant piping length (ft.) - 25)

| Model | Outdoor unit precharged | Refrigerant piping length (one way): ft. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| **MUY-D30NA**<br>**MUY-D36NA** | 4 lb. | 0 | 1.08 | 3.24 | 5.40 | 7.56 | 9.72 | 11.88 | 14.04 | 16.20 |

Calculation: X oz. = 1.08/5 oz. / ft. × (Refrigerant piping length (ft.) - 25)

**NOTE**: Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

# 7 DATA

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

### 7-1. PERFORMANCE DATA

#### 1) COOLING CAPACITY

| Model | Indoor air IWB (˚F) | Outdoor intake air DB temperature (˚F) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 | | | 85 | | | 95 | | | 105 | | | 115 | | |
| | | TC | SHC | TPC | TC | SHC | TPC | TC | SHC | TPC | TC | SHC | TPC | TC | SHC | TPC |
| **MUZ-D30NA** | 71 | 37.6 | 19.1 | 3.43 | 35.2 | 17.8 | 3.75 | 33.0 | 16.7 | 4.04 | 30.7 | 15.6 | 4.25 | 28.2 | 14.3 | 4.43 |
| | 67 | 35.6 | 22.8 | 3.23 | 33.2 | 21.2 | 3.56 | 30.7 | 19.6 | 3.85 | 28.6 | 18.3 | 4.08 | 26.2 | 16.8 | 4.27 |
| | 63 | 33.5 | 25.9 | 3.08 | 31.0 | 24.0 | 3.41 | 28.9 | 22.3 | 3.68 | 26.2 | 20.3 | 3.93 | 23.9 | 18.5 | 4.08 |
| **MUZ-D36NA** | 71 | 40.7 | 19.8 | 3.88 | 38.0 | 18.5 | 4.25 | 35.7 | 17.4 | 4.58 | 33.2 | 16.2 | 4.82 | 30.5 | 14.9 | 5.01 |
| | 67 | 38.5 | 23.9 | 3.66 | 35.9 | 22.2 | 4.03 | 33.2 | 20.6 | 4.36 | 30.9 | 19.1 | 4.62 | 28.4 | 17.6 | 4.84 |
| | 63 | 36.2 | 27.3 | 3.49 | 33.5 | 25.3 | 3.86 | 31.2 | 23.5 | 4.16 | 28.4 | 21.4 | 4.45 | 25.9 | 19.5 | 4.62 |
| **MUY-D30NA** | 71 | 37.6 | 19.1 | 3.01 | 35.2 | 17.8 | 3.30 | 33.0 | 16.7 | 3.55 | 30.7 | 15.6 | 3.73 | 28.2 | 14.3 | 3.89 |
| | 67 | 35.6 | 22.8 | 2.84 | 33.2 | 21.2 | 3.13 | 30.7 | 19.6 | 3.38 | 28.6 | 18.3 | 3.58 | 26.2 | 16.8 | 3.75 |
| | 63 | 33.5 | 25.9 | 2.70 | 31.0 | 24.0 | 2.99 | 28.9 | 22.3 | 3.23 | 26.2 | 20.3 | 3.45 | 23.9 | 18.5 | 3.58 |
| **MUY-D36NA (208 V)** | 71 | 40.7 | 19.8 | 3.75 | 38.0 | 18.5 | 4.10 | 35.7 | 17.4 | 4.42 | 33.2 | 16.2 | 4.65 | 30.5 | 14.9 | 4.84 |
| | 67 | 38.5 | 23.9 | 3.54 | 35.9 | 22.2 | 3.89 | 33.2 | 20.6 | 4.21 | 30.9 | 19.1 | 4.46 | 28.4 | 17.6 | 4.67 |
| | 63 | 36.2 | 27.3 | 3.37 | 33.5 | 25.3 | 3.73 | 31.2 | 23.5 | 4.02 | 28.4 | 21.4 | 4.29 | 25.9 | 19.5 | 4.46 |
| **MUY-D36NA (230 V)** | 71 | 42.4 | 20.6 | 3.77 | 39.6 | 19.3 | 4.13 | 37.2 | 18.1 | 4.45 | 34.6 | 16.8 | 4.69 | 31.8 | 15.5 | 4.88 |
| | 67 | 40.1 | 24.9 | 3.56 | 37.4 | 23.2 | 3.92 | 34.6 | 21.5 | 4.24 | 32.2 | 20.0 | 4.49 | 29.6 | 18.3 | 4.71 |
| | 63 | 37.7 | 28.4 | 3.39 | 34.9 | 26.3 | 3.75 | 32.5 | 24.5 | 4.05 | 29.6 | 22.3 | 4.32 | 27.0 | 20.3 | 4.49 |

**NOTE**: 1. IWB : Intake air wet-bulb temperature
TC : Total Capacity (x10$^3$ Btu/h)
SHC : Sensible Heat Capacity (x10$^3$ Btu/h)
TPC : Total Power Consumption (kW)
2. SHC is based on 80˚F of indoor Intake air DB temperature.

#### 2) COOLING CAPACITY CORRECTIONS

| | Refrigerant piping length (one way: ft.) | | | |
|---|---|---|---|---|
| | 25 (std.) | 40 | 65 | 100 |
| **MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA** | 1.0 | 0.95 | 0.878 | 0.713 |

#### 3) HEATING CAPACITY

| Model | Indoor air IDB (˚F) | Outdoor intake air WB temperature (˚F) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 15 | | 25 | | 35 | | 43 | | 45 | | 55 | |
| | | TC | TPC | TC | TPC | TC | TPC | TC | TPC | TC | TPC | TC | TPC |
| **MUZ-D30NA** | 75 | 18.9 | 2.50 | 23.6 | 2.94 | 28.2 | 3.28 | 31.8 | 3.44 | 32.8 | 3.49 | 37.2 | 3.63 |
| | 70 | 20.0 | 2.42 | 24.5 | 2.87 | 28.9 | 3.19 | 32.6 | 3.36 | 33.6 | 3.43 | 38.0 | 3.56 |
| | 65 | 20.5 | 2.32 | 25.6 | 2.77 | 29.8 | 3.11 | 33.6 | 3.28 | 34.6 | 3.33 | 38.8 | 3.49 |
| **MUZ-D36NA** | 75 | 20.4 | 2.86 | 25.5 | 3.36 | 30.4 | 3.74 | 34.3 | 3.94 | 35.4 | 3.99 | 40.1 | 4.15 |
| | 70 | 21.6 | 2.76 | 26.4 | 3.28 | 31.2 | 3.65 | 35.2 | 3.84 | 36.3 | 3.92 | 41.0 | 4.07 |
| | 65 | 22.2 | 2.65 | 27.6 | 3.17 | 32.2 | 3.55 | 36.3 | 3.74 | 37.3 | 3.80 | 41.9 | 3.99 |

**NOTE**: 1. IDB: Intake air dry-bulb temperature
TC : Total Capacity (x10$^3$ Btu/h)
TPC : Total Power Consumption (kW)
2. Above data is for heating operation without any frost.

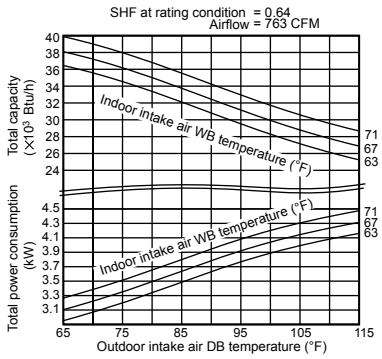
How to operate with fixed operational frequency of the compressor.

1. Press the EMERGENCY OPERATION switch on the front of the indoor unit, and select either EMERGENCY COOL mode or EMERGENCY HEAT mode before starting to operate the air conditioner.
2. The compressor starts with operational frequency.
3. The fan speed of the indoor unit is High.
4. This operation continues for 30 minutes.
5. In order to release this operation, press the EMERGENCY OPERATION switch twice or once, or press any button on the remote controller.

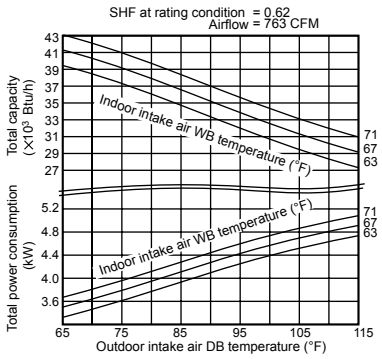
## 7-2. PERFORMANCE CURVE

### Cooling

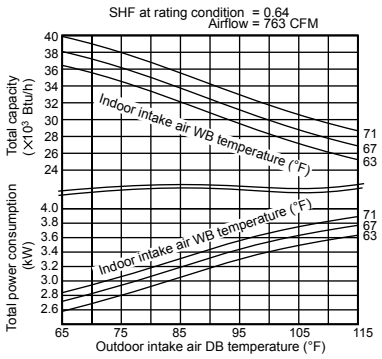
#### MUZ-D30NA



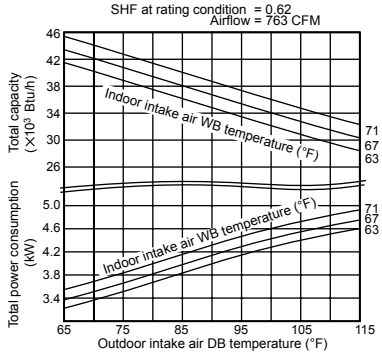

#### MUZ-D36NA




#### MUY-D30NA

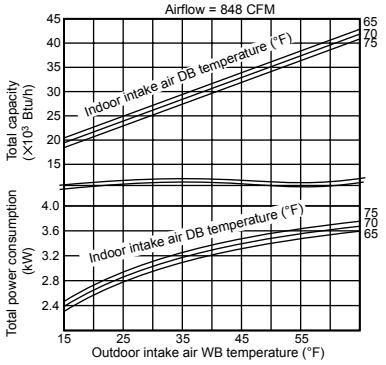



#### MUY-D36NA

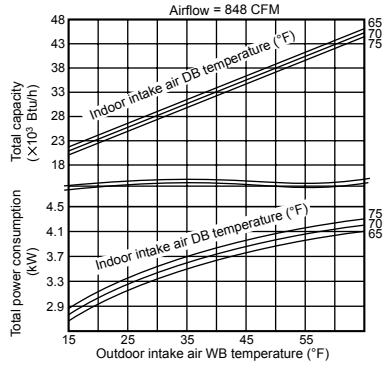



### Heating

#### MUZ-D30NA




#### MUZ-D36NA



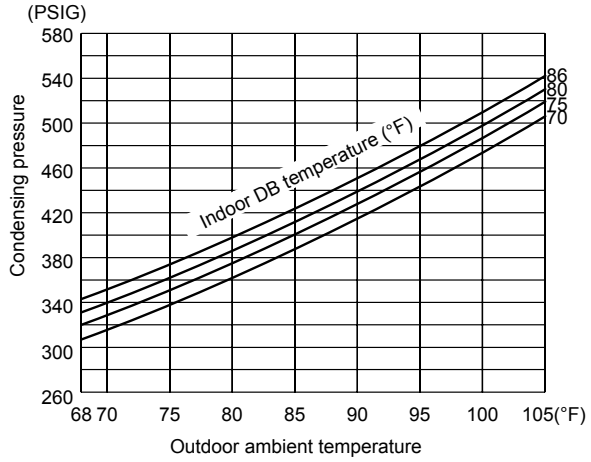

This value of frequency is not the same as the actual frequency in operating. Refer to 7-5 and 7-6 for the relationships between frequency and capacity.

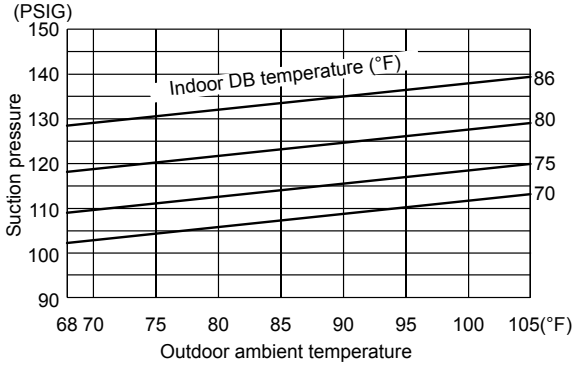
## 7-3. CONDENSING PRESSURE

### Cooling

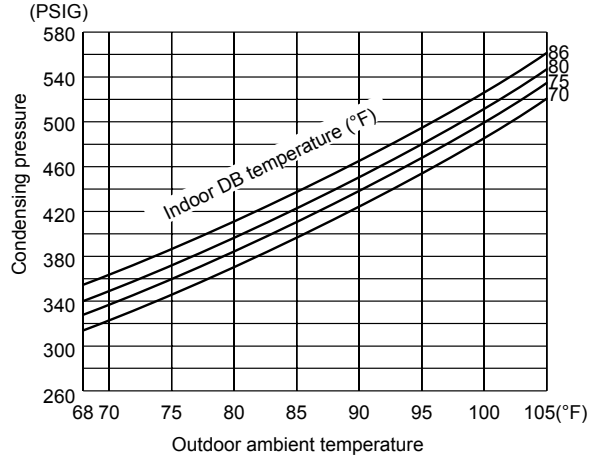
Data is based on the condition of indoor humidity 50%.
Air flow should be set to High speed.

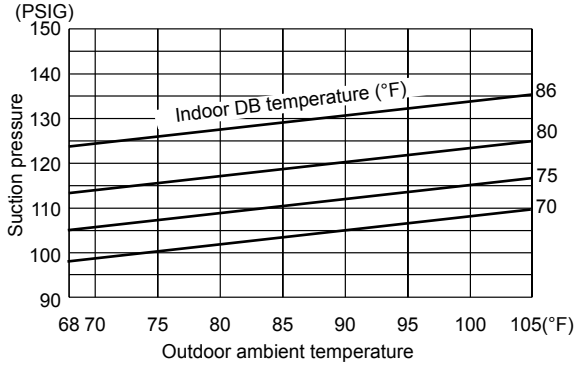
### MUZ-D30NA



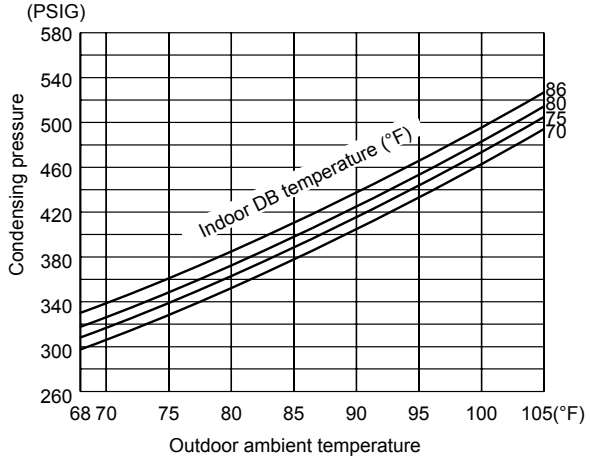



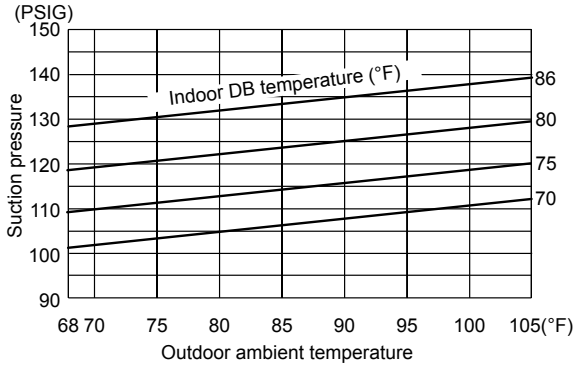

### MUZ-D36NA



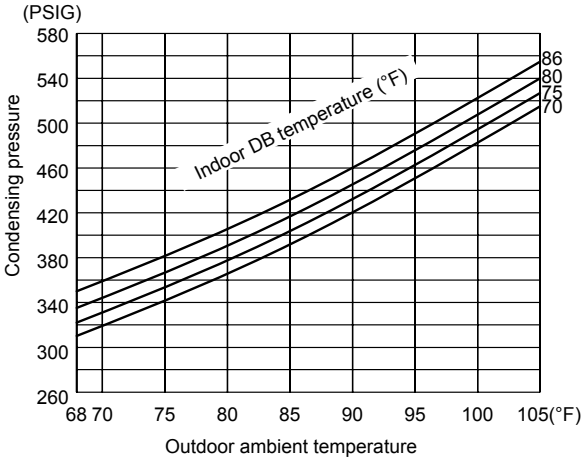



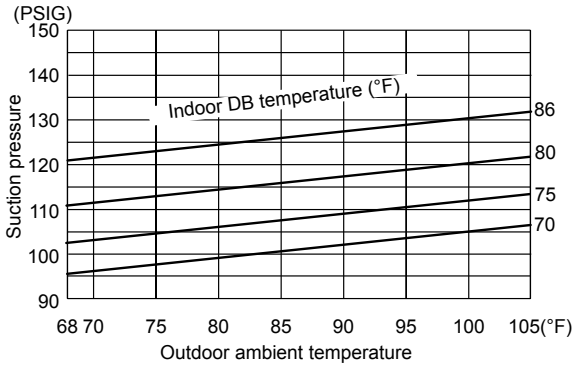

### MUY-D30NA



**MUY-D36NA**

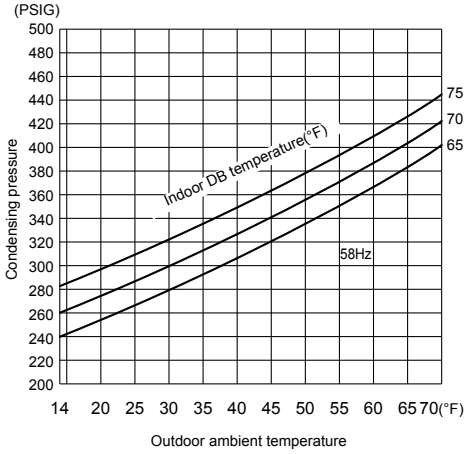


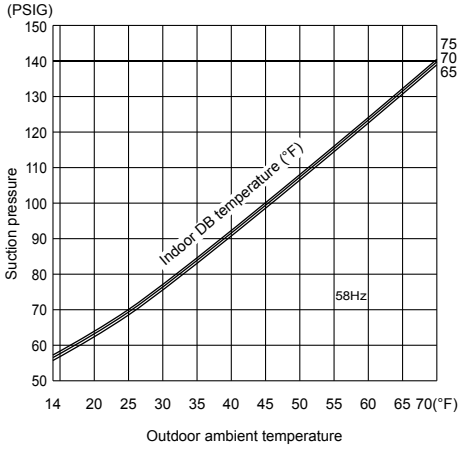




**Heating**

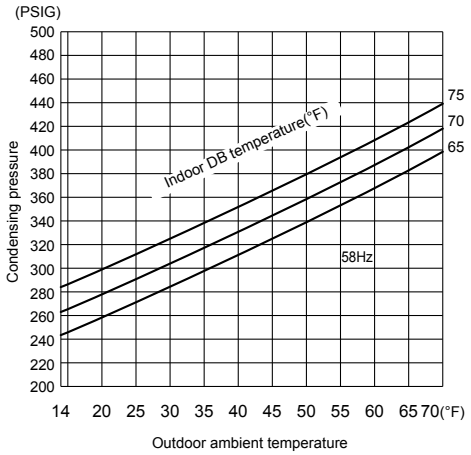
Data is based on the condition of outdoor humidity 75%.
Air flow should be set to High speed.
Data is for heating operation without any frost.

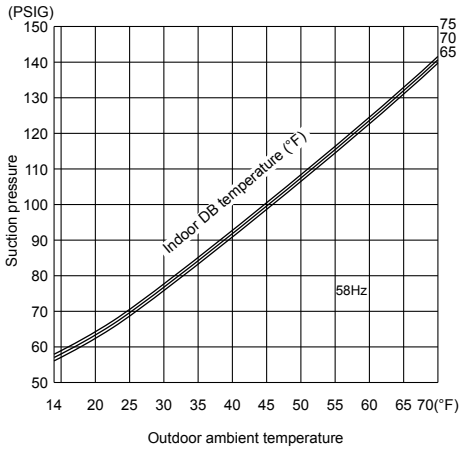
**MUZ-D30NA**




**MUZ-D36NA**



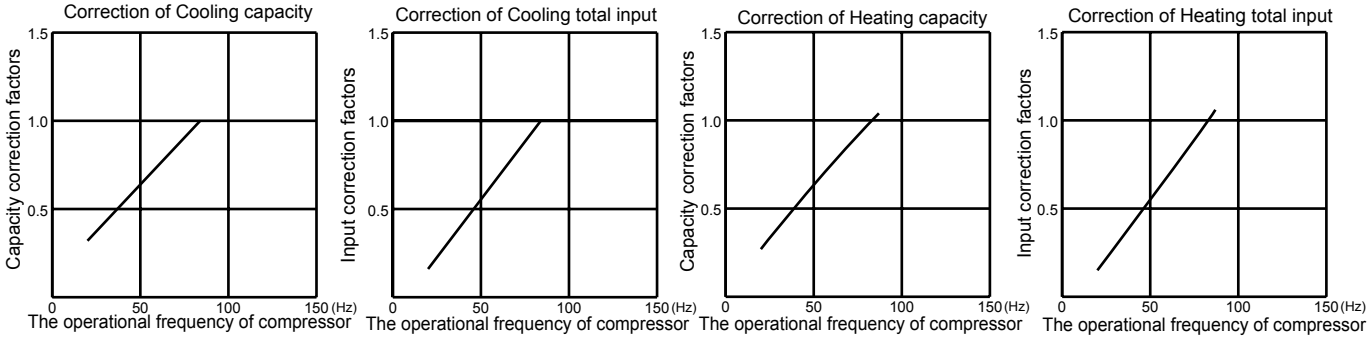



## 7-4. STANDARD OPERATION DATA

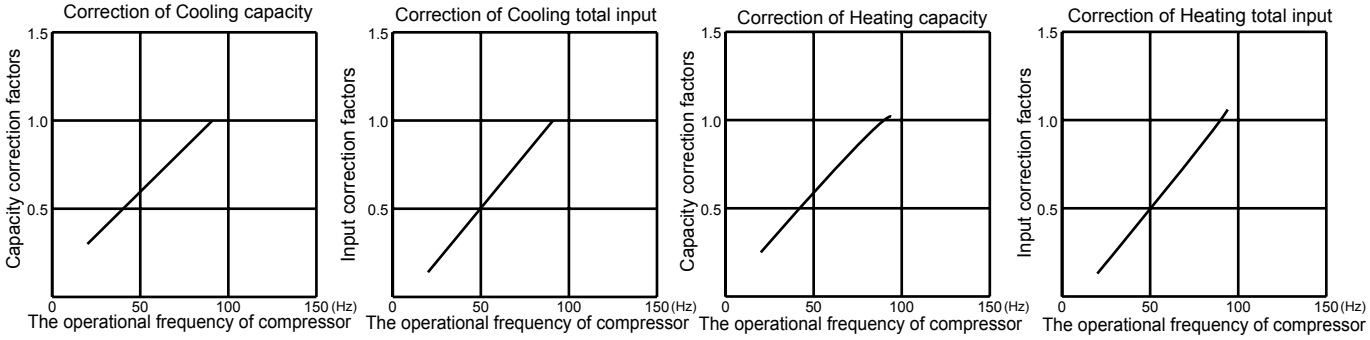
| Model | | | | MSZ-D30NA | | MSZ-D36NA | | MSY-D30NA | MSY-D36NA |
|---|---|---|---|---|---|---|---|---|---|
| Item | | | Unit | Cooling | Heating | Cooling | Heating | Cooling | Cooling |
| Total | Capacity | | Btu/h | 30,700 | 32,600 | 32,000/33,200 | 35,200 | 30,700 | 33,200/34,000 |
| | SHF | | — | 0.64 | — | 0.62 | — | 0.64 | 0.62 |
| | Input | | kW | 3.85 | 3.36 | 4.14/4.36 | 3.84 | 3.38 | 4.21/4.24 |
| | Rated frequency | | Hz | 84 | 84 | 91 | 91 | 79 | 92 |
| Electrical circuit | Indoor unit | | | MSZ-D30NA | | MSZ-D36NA | | MSY-D30NA | MSY-D36NA |
| | Power supply | | V, phase, Hz | 208/230 , 1 , 60 | | | | | |
| | Input | | kW | 0.058 | | | | | |
| | Fan motor current | | A | 0.45/0.42 | | | | | |
| | Outdoor unit | | | MUZ-D30NA | | MUZ-D36NA | | MUY-D30NA | MUY-D36NA |
| | Power supply | | V, phase, Hz | 208/230 , 1 , 60 | | | | | |
| | Input | | kW | 3.792 | 3.302 | 4.082/4.302 | 3.782 | 3.322 | 4.152/4.182 |
| | Comp. current | | A | 17.25/15.56 | 14.95/13.46 | 18.65/17.86 | 17.25/15.56 | 15.05/13.56 | 18.95/17.26 |
| | Fan motor current | | A | 0.80/0.72 | | | | | |
| Refrigerant circuit | Condensing pressure | | PSIG | 468 | 404 | 480 | 420 | 453 | 475 |
| | Suction pressure | | PSIG | 126 | 96 | 122 | 94 | 125 | 119 |
| | Discharge temperature | | ˚F | 186.8 | 169.7 | 198.7 | 168.8 | 191.3 | 197.1 |
| | Condensing temperature | | ˚F | 126.5 | 114.3 | 128.5 | 117.0 | 123.8 | 127.4 |
| | Suction temperature | | ˚F | 45.5 | 29.8 | 48.0 | 29.1 | 54.7 | 48.6 |
| | Comp. shell bottom temperature | | ˚F | 175.6 | 156.4 | 187.0 | 155.7 | 177.4 | 182.7 |
| | Ref. pipe length | | ft. | 25 | | | | | |
| | Refrigerant charge (R410A) | | — | 4 lb. 10 oz. | | | | 4 lb. | |
| Indoor unit | Intake air temperature | DB | ˚F | 80 | 70 | 80 | 70 | 80 | 80 |
| | | WB | ˚F | 67 | 60 | 67 | 60 | 67 | 67 |
| | Discharge air temperature | DB | ˚F | 53.9 | 112.2 | 53 | 114.9 | 53.7 | 51.7 |
| | | WB | ˚F | 53 | 73.9 | 52.1 | 74.6 | 52.8 | 50.8 |
| | Fan speed (High) | | rpm | 1,100 | | | | | |
| | Airflow (High) | | CFM | 741 (Wet) | 795 | 738 (Wet) | 794 | 718 (Wet) | 710 (Wet) |
| Outdoor unit | Intake air temperature | DB | ˚F | 95 | 47 | 95 | 47 | 95 | 95 |
| | | WB | ˚F | — | 43 | — | 43 | — | — |
| | Fan speed | | rpm | 800 | | | | | |
| | Airflow | | CFM | 1,941 | | | | | |

## 7-5. CAPACITY AND INPUT CORRECTION BY INVERTER OUTPUT FREQUENCY

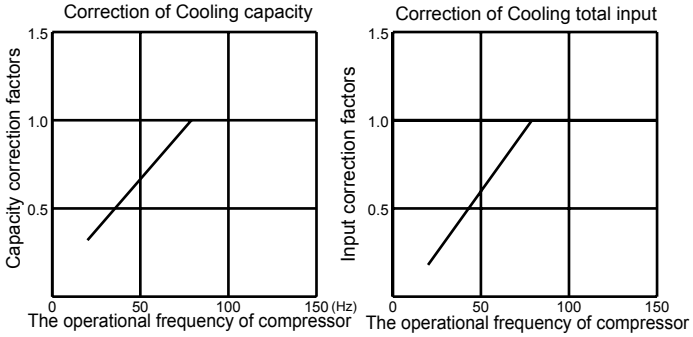
### MUZ-D30NA



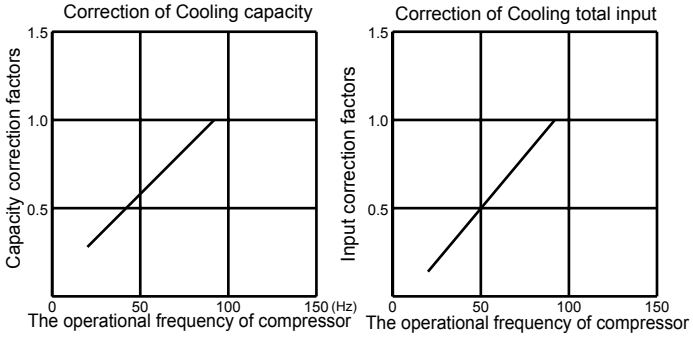

### MUZ-D36NA




### MUY-D30NA




### MUY-D36NA



## 7-6. TEST RUN OPERATION (How to operate fixed-frequency operation)

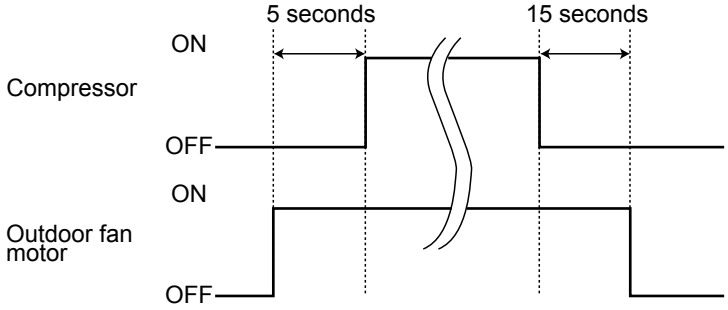
1. Press EMERGENCY OPERATION switch to COOL or HEAT mode (COOL: Press once, HEAT: Press twice).
2. Test run operation starts and continues to operate for 30 minutes.
3. Compressor operates at rated frequency in COOL mode or 58 Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (Operation frequency of compressor varies).
6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

# 8 ACTUATOR CONTROL

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

### 8-1. OUTDOOR FAN MOTOR CONTROL

The fan motor turns ON/OFF, interlocking with the compressor.
[ON] The fan motor turns ON 5 seconds before the compressor starts up.
[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.

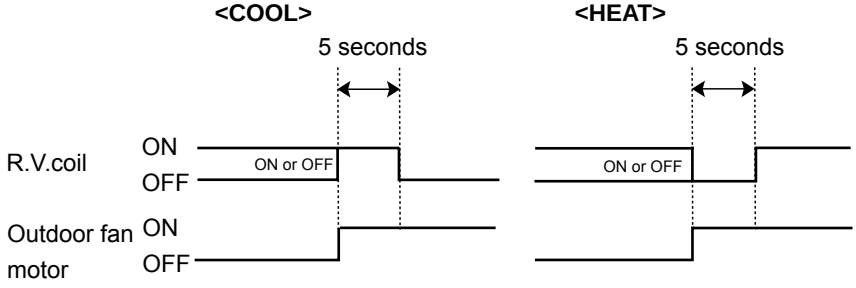



### 8-2. R.V. COIL CONTROL

**<MUZ>**

Heating · · · · · · · · · · · · · · · · · · ON
Cooling · · · · · · · · · · · · · · · · · · OFF
Dry · · · · · · · · · · · · · · · · · · · · OFF

**NOTE**: The 4-way valve reverses for 5 seconds right before start-up of the compressor.




### 8-3. Relation between main sensor and actuator

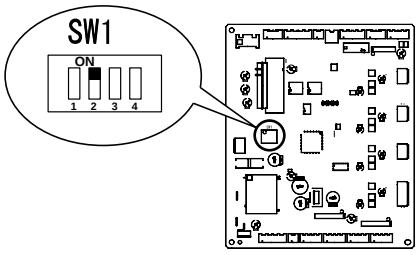
| Sensor | Purpose | Actuator | | | | |
|---|---|---|---|---|---|---|
| | | Compressor | LEV | Outdoor fan motor | R.V. coil | Indoor fan motor |
| Discharge temperature thermistor | Protection | ○ | ○ | | | |
| Indoor coil temperature thermistor | Cooling: Coil frost prevention | ○ | | | | |
| | Heating: High pressure protection | ○ | ○ | ○ | | |
| Defrost thermistor | Defrosting | ○ | ○ | ○ | ○ | ○ |
| Fin temperature thermistor | Protection | ○ | | ○ | | |
| Outdoor heat exchanger temperature | Protection | ○ | ○ | ○ | | |
| Ambient temperature thermistor | Cooling: Low ambient temperature operation | ○ | ○ | ○ | | |

# 9 SERVICE FUNCTIONS

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

### 9-1. PRE-HEAT CONTROL

If moisture gets into the refrigerant cycle, or when refrigerant is liquefied and collected in the compressor, it may interfere the start-up of the compressor.
To improve start-up condition, the compressor is energized even while it is not operating.
This is to generate heat at the winding.
The compressor uses about 50 W when pre-heat control is turned ON.
Pre-heat control is OFF at initial setting.



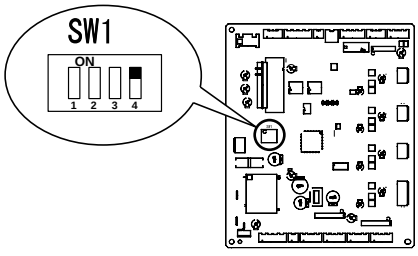

**[How to activate pre-heat control]**

1. Turn OFF the power supply for the air conditioner before making the setting.
2. Set the 2nd Dip Switch of SW1 on the outdoor electronic control P.C. board to ON to activate pre-heat control function.

### 9-2. CHANGE IN DEFROST SETTING

**Changing defrost finish temperature**

1. Turn OFF the power supply for the air conditioner before making the setting.
2. Set the 4th Dip Switch of SW1 on the outdoor electronic control P.C. board to ON to change the defrost finish temperature. (Refer to 10-6-1.)




| 4th Dip Switch of SW1 | Defrost finish temperature |
|---|---|
| OFF (Initial setting) | 49.5°F (9.7°C) |
| ON | 64.9°F (18.3°C) |

# 10 TROUBLESHOOTING

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

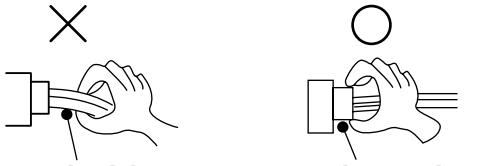
### 10-1. CAUTIONS ON TROUBLESHOOTING

**1. Before troubleshooting, check the following**

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for miswiring.

**2. Take care of the following during servicing**

1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, then after confirming the horizontal vane is closed, turn off the breaker and/or disconnect the power plug.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
3) When removing the electrical parts, be careful of the residual voltage of smoothing capacitor.
4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.




**3. Troubleshooting procedure**

1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
2) Before servicing check that the connector and terminal are connected properly.
3) When the electronic control P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) Refer to 10-2. and 10-3.

## 10-2. FAILURE MODE RECALL FUNCTION

Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (10-3.) disappears, the memorized failure details can be recalled.

### 1. Flow chart of failure mode recall function for the indoor/outdoor unit

Operational procedure

The cause of abnormality cannot be found because the abnormality does not recur.

**Setting up the failure mode recall function**

Turn ON the power supply.
<Preparation of the remote controller>
① While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
② First, release RESET button.
And release the other two buttons after all LCD in operation display section of the remote controller is displayed after 3 seconds.

Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

Does the left lamp of OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: Either indoor or outdoor unit is abnormal. Beep is emitted at the same timing as the blinking of the left lamp of OPERATION INDICATOR lamp. ※2

No (OFF) → Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that cannot be recalled with this way.
Confirm if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function. (Refer to 10-2.2)

Yes (Blinks)

**Judgment of indoor/outdoor abnormality**

Before blinking, does the left lamp of OPERATION INDICATOR lamp stay ON for 3 seconds?
Stays ON for 3 seconds (without beep): The outdoor unit is abnormal.

Yes → The outdoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the outdoor unit failure mode table. (Refer to 10-2.3)
Make sure to check at least two consecutive blinking cycles. ※3

No → The indoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the indoor unit failure mode table. (Refer to indoor unit service manual.)
Make sure to check at least two consecutive blinking cycles. ※2

**Releasing the failure mode recall function**

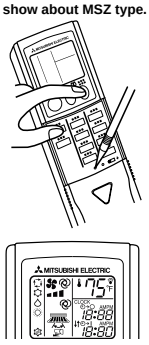
Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

Repair the defective parts.

**Deleting the memorized abnormal condition**

① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
② Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

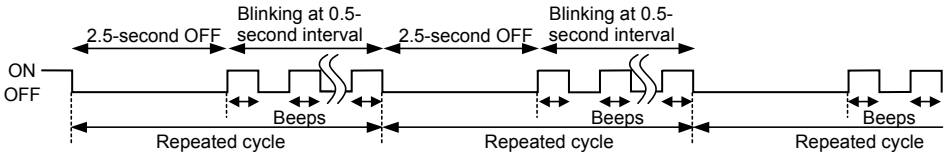
**This figures show about MSZ type.**



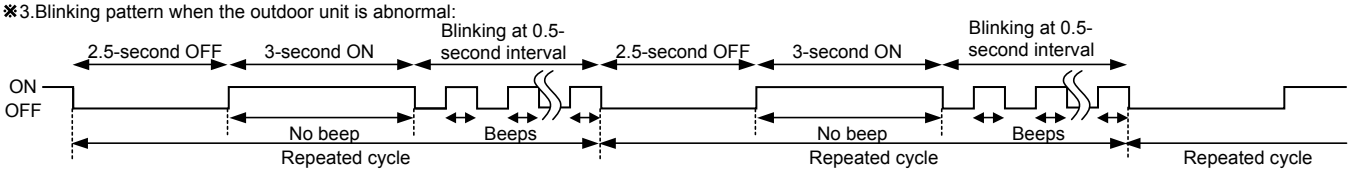
※1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

**NOTE**: 1. Make sure to release the failure mode recall function once it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:




※3.Blinking pattern when the outdoor unit is abnormal:



## 2. Flow chart of the detailed outdoor unit failure mode recall function

Operational procedure

The outdoor unit might be abnormal.
Confirm if outdoor unit is abnormal according to the following procedures.

↓

Confirm that the remote controller is in the failure mode recall function.

↓

With the remote controller headed towards the indoor unit, press TOO COOL or TOO WARM button to adjust the set temperature to 77˚F (25˚C). ※1

※1. Regardless of normal or abnormal condition, 2 short beeps are emitted as the signal is received.

↓

Does left lamp of OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: The outdoor unit is abnormal. Beep is emitted at the same timing as the blinking of the left lamp of OPERATION INDICATOR lamp. ※2

No (OFF) → The outdoor unit is normal.

Yes (Blinks)

↓

The outdoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the outdoor unit failure mode table. (10-2.3.)
Make sure to check at least two consecutive blinking cycles. ※2

↓

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

Release the failure mode recall function according to the left mentioned procedure.

↓

Repair the defective parts.

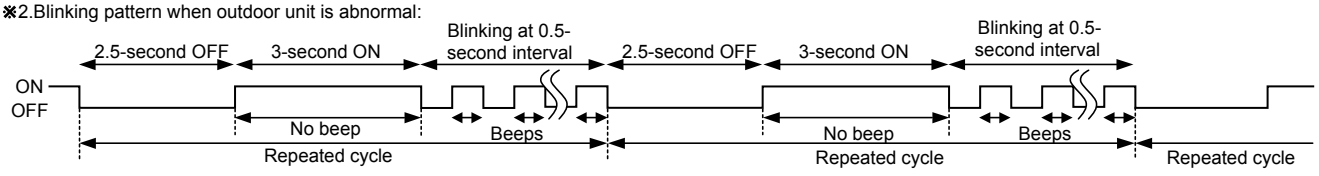
↓

Deleting the memorized abnormal condition

① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" (10-2.1.).
② Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

**NOTE**: 1. Make sure to release the failure mode recall function once it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2.Blinking pattern when outdoor unit is abnormal:



### 3. Outdoor unit failure mode table

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

| The left lamp of OPERATION INDICATOR lamp (Indoor unit) | Abnormal point (Failure mode / protection) | LED indication (Outdoor P.C. board) | | Condition | Correspondence | Indoor/outdoor unit failure mode recall function |
|---|---|---|---|---|---|---|
| | | LED 1 | LED 2 | | | |
| OFF | Non (Normal) | Lighting | Lighting | — | — | — |
| 2-time flash | Outdoor power system | Lighting | Lighting | IPM protection stop or lock protection stop is continuously performed 3 times within 1 minute after the compressor gets started, or converter protection stop or bus-bar voltage protection stop is continuously performed 3 times within 3 minutes after start-up. | • Check the connection of the compressor connecting wire.<br>• Refer to 10-5.Ⓐ "How to check inverter/compressor".<br>• Refer to 10-5.Ⓕ "Check of compressor start failure".<br>• Check the stop valve. | ○ |
| 3-time flash | Discharge temperature thermistor | Lighting | Once | Thermistor shorts or opens during compressor running. | • Refer to 10-5.Ⓑ "Check of outdoor thermistors". | ○ |
| | Defrost thermistor (MUZ) | Lighting | Once | | | |
| | Ambient temperature thermistor | Lighting | Twice | | | |
| | Fin temperature thermistor | Lighting | 3 times | | | |
| | P.C. board temperature thermistor | Lighting | 4 times | | • Replace the outdoor electronic control P.C. board. | |
| | Outdoor heat exchanger temperature thermistor | Lighting | 9 times | | • Refer to 10-5.Ⓑ "Check of outdoor thermistors". | |
| 4-time flash | Overcurrent | Once | Goes out | 28 A current flow into intelligent power module. | • Reconnect compressor connector.<br>• Refer to 10-5.Ⓐ "How to check inverter/compressor."<br>• Refer to 10-5.Ⓕ "Check of compressor start failure".<br>• Check the stop valve. | — |
| 5-time flash | Discharge temperature | Lighting | Lighting | Temperature of discharge temperature thermistor exceeds 241°F (116°C), compressor stops. Compressor can restart if discharge temperature thermistor reads 212°F (100°C) or less 3 minutes later. | • Check refrigerant circuit and refrigerant amount.<br>• Refer to 10-5.Ⓖ "Check of LEV". | — |
| 6-time flash | High pressure | Lighting | Lighting | The outdoor heat exchanger temperature exceeds 158°F (70°C) during cooling or the indoor gas pipe temperature exceeds 158°F (70°C) during heating (MUZ). | • Check refrigerant circuit and refrigerant amount.<br>• Check the stop valve. | — |
| 7-time flash | Fin temperature | 3 times | Goes out | The fin temperature exceeds 189°F (87°C) during operation. | • Check around outdoor unit.<br>• Check outdoor unit air passage.<br>• Refer to 10-5.Ⓓ "Check of outdoor fan motor". | — |
| | P.C. board temperature | 4 times | Goes out | The P.C. board temperature exceeds 158°F (70°C) during operation. | | |
| 8-time flash | Outdoor fan motor | Lighting | Lighting | Failure occurs continuously 3 times within 30 seconds after the fan gets started. | • Refer to 10-5.Ⓓ "Check of outdoor fan motor". | — |
| 9-time flash | Nonvolatile memory data | Lighting | 5 times | Nonvolatile memory data cannot be read properly. | • Replace the outdoor electronic control P.C. board. | ○ |
| 10-time flash | Discharge temperature | Lighting | Lighting | The frequency of the compressor is kept 80 Hz or more and the discharge temperature is kept under 102°F (39°C) for more than 20 minutes. | • Check refrigerant circuit and refrigerant amount.<br>• Refer to 10-5.Ⓖ "Check of LEV". | — |
| 11-time flash | Communication error between P.C. boards | Lighting | 6 times | Communication error occurs between the electronic control P.C. board and power board for more than 10 seconds. | • Check the connecting wire between outdoor electronic control P.C. board and power board. | — |
| | | | | The communication between boards protection stop is continuously performed twice. | | ○ |
| | Current sensor | Lighting | 7 times | A short or open circuit is detected in the current sensor during compressor operating. | • Replace the power board. | — |
| | | | | Current sensor protection stop is continuously performed twice. | | ○ |
| | Zero cross detecting circuit | 5 times | Goes out | Zero cross signal cannot be detected while the compressor is operating. | • Check the connecting wire among electronic control P.C. board, noise filter P.C. board and power board. | — |
| | | | | The protection stop of the zero cross detecting circuit is continuously performed 10 times. | | ○ |

**NOTE**: Blinking patterns of this mode differ from the ones of Troubleshooting check table (10-3.).

| The left lamp of OPERATION INDICATOR lamp (Indoor unit) | Abnormal point (Failure mode / protection) | LED indication (Outdoor P.C. board) | | Condition | Correspondence | Indoor/outdoor unit failure mode recall function |
|---|---|---|---|---|---|---|
| | | LED 1 | LED 2 | | | |
| 11-time flash | Converter | 5 times | Goes out | A failure is detected in the operation of the converter during operation. | • Check the voltage of power supply.<br>• Replace the power board. | — |
| | Bus-bar voltage (1) | 5 times | Goes out | The bus-bar voltage exceeds 400 V or falls to 200 V or below during compressor operating. | | |
| | Bus-bar voltage (2)<br>※ Even if this protection stop is performed continuously 3 times, it does not mean the abnormality in outdoor power system. | 6 times | Goes out | The bus-bar voltage exceeds 400 V or falls to 50 V or below during compressor operating. | • Check the voltage of power supply.<br>• Replace the outdoor electronic control P.C. board. | |

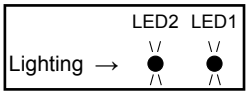
## 10-3. TROUBLESHOOTING CHECK TABLE

# MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

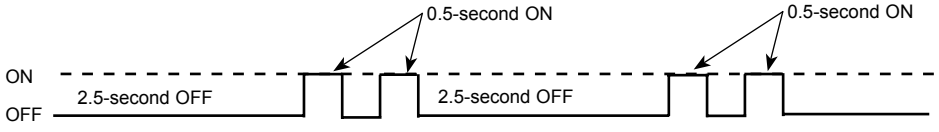
| No. | Symptom | Indication | | Abnormal point / Condition | Condition | Correspondence |
|---|---|---|---|---|---|---|
| | | LED1 (Red) | LED2 (Yellow) | | | |
| 1 | Outdoor unit does not operate. | Lightning | Twice | Outdoor power system | IPM protection stop or lock protection stop is continuously performed three times within 1 minute after the compressor gets started, or converter protection stop or bus-bar voltage protection stop is continuously performed 3 times within 3 minutes after start-up. | •Check the connection of the compressor connecting wire.<br>•Refer to 10-5.Ⓐ "How to check inverter/compressor".<br>•Refer to 10-5.Ⓕ "Check of compressor start failure".<br>•Check the stop valve. |
| 2 | | Lightning | 3 times | Discharge temperature thermistor | A short circuit is detected in the thermistor during operation, or an open circuit is detected in the thermistor after 10 minutes of compressor start-up. | •Refer to 10-5.Ⓑ "Check of outdoor thermistor". |
| 3 | | Lightning | 4 times | Fin temperature thermistor | A short or open circuit is detected in the thermistor during operation. | •Refer to 10-5.Ⓑ "Check of outdoor thermistor". |
| | | | | P.C. board temperature thermistor | | •Replace the outdoor electronic control P.C. board. |
| 4 | | Lightning | 5 times | Ambient temperature thermistor | A short or open circuit is detected in the thermistor during operation. | •Refer to 10-5.Ⓑ "Check of outdoor thermistor". |
| | | | | Outdoor heat exchanger temperature thermistor | A short circuit is detected in the thermistor during operation, or an open circuit is detected in the thermistor after 5 minutes (in cooling) and 10 minutes (in heating (MUZ)) of compressor start-up. | |
| | | | | Defrost thermistor (MUZ) | A short circuit is detected in the thermistor during operation, or an open circuit is detected in the thermistor after 5 minutes of compressor start-up. | |
| 5 | | Lightning | 6 times | Serial signal | The communication fails between the indoor and outdoor unit for 3 minutes. | •Refer to 10-5.Ⓗ "How to check miswiring and serial signal error. |
| 6 | | Lightning | 7 times | Nonvolatile memory data | The nonvolatile memory data cannot be read properly. | •Replace the outdoor electronic control P.C. board. |
| 7 | | Lightning | 8 times | Current sensor | Current sensor protection stop is continuously performed twice. | •Replace the power board. |
| 8 | | Lightning | 11 times | Communication error between P.C. boards | The communication protection stop between boards is continuously performed twice. | •Check the connecting wire between outdoor electronic control P.C. board and power board. |
| 9 | | Lightning | 12 times | Zero cross detecting circuit | The protection stop of the zero cross detecting circuit is continuously performed 10 times. | •Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board. |
| 10 | 'Outdoor unit stops and restarts 3 minutes later' is repeated. | Twice | Goes out | IPM protection | Overcurrent is detected after 30 minutes of compressor start-up. | •Reconnect compressor connector.<br>•Refer to 10-5.Ⓐ "How to check inverter/compressor".<br>•Refer to 10-5.Ⓕ "Check of compressor start failure".<br>•Check the stop valve.<br>•Check the power module (PAM module). |
| | | | | Lock protection | Overcurrent is detected within 30 minutes of compressor start-up | |
| 11 | | 3 times | Goes out | Discharge temperature protection | Temperature of discharge temperature thermistor exceeds 241°F (116°C), compressor stops. Compressor can restart if discharge temperature thermistor reads 212°F (100°C) or less 3 minutes later. | •Check the amount of gas and refrigerant circuit.<br>•Refer to 10-5.Ⓖ "Check of LEV". |
| 12 | | 4 times | Goes out | Fin temperature protection | The fin temperature exceeds 189°F (87°C) during operation. | • Check around outdoor unit.<br>• Check outdoor unit air passage.<br>• Refer to 10-5.Ⓓ "Check of outdoor fan motor". |
| | | | | P.C. board temperature protection | The P.C. board temperature exceeds 158°F (70°C) during operation. | |
| 13 | | 5 times | Goes out | High-pressure protection | The outdoor heat exchanger temperature exceeds 158°F (70 °C) during cooling or indoor gas pipe temperature exceeds 158°F (70°C) during heating (MUZ). | •Check around of gas and the refrigerant circuit.<br>•Check of stop valve. |
| 14 | | 8 times | Goes out | Converter protection | A failure is detected in the operation of the converter during operation. | •Replace the power board. |
| 15 | | 9 times | Goes out | Bus-bar voltage protection (1) | The bus-bar voltage exceeds 400 V or falls to 200 V or below during compressor operating. | • Check the voltage of power supply.<br>• Replace the power board or the outdoor electronic control P.C. board.<br>• Refer to 10-5.Ⓙ "Check of bus-bar voltage". |
| | | | | Bus-bar voltage protection (2) | The bus-bar voltage exceeds 400 V or falls to 50 V or below during compressor operating. | |
| 16 | | 13 times | Goes out | Outdoor fan motor | Failure occurs continuously three times within 30 seconds after the fan gets started. | •Refer to 10-5.Ⓓ "Check of outdoor fan motor". |
| 17 | | Lighting | 8 times | Current sensor protection | A short or open circuit is detected in the current sensor during compressor operating. | •Replace the power board. |
| 18 | | Lighting | 11 times | Communication between P.C. boards protection | Communication error occurs between the outdoor electronic control P.C. board and power board for more than 10 seconds. | •Check the connecting wire between outdoor electronic control P.C. board and power board. |
| 19 | | Lighting | 12 times | Zero cross detecting circuit protection | Zero cross signal cannot be detected while the compressor is operating. | •Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board. |

**NOTE** 1. The location of LED is illustrated at the right figure. Refer to 10-6.1.
2. LED is lighted during normal operation.

Outdoor electronic control P.C. board (Parts side)



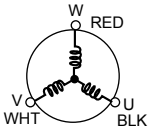
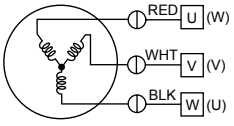
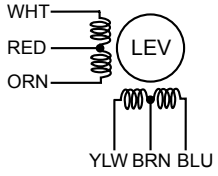

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the flashing frequency is “2”.



| No. | Symptom | Indication | | Abnormal point / Condition | Condition | Correspondence |
|---|---|---|---|---|---|---|
| | | LED1 (Red) | LED2 (Yellow) | | | |
| 20 | Outdoor unit operates. | Once | Lighting | Primary current protection | The input current exceeds 15 A. | • These symptoms do not mean any abnormality of the product, but check the following points.<br>• Check if indoor filters are clogged.<br>• Check if refrigerant is short.<br>• Check if indoor/outdoor unit air circulation is short cycled. |
| | | | | Secondary current protection | The current of the compressor exceeds 15 A. | |
| 21 | | Twice | Lighting | High-pressure protection (MUZ) | The indoor gas pipe temperature exceeds 113°F (45°C) during heating. | |
| | | | | Defrosting in cooling | The indoor gas pipe temperature falls 37°F (3°C) or below during cooling. | |
| 22 | | 3 times | Lighting | Discharge temperature protection | The discharge temperature exceeds 212°F (100°C) during operation. | • Check refrigerant circuit and refrigerant amount.<br>• Refer to 10-5.Ⓖ "Check of LEV".<br>• Refer to 10-5.Ⓑ "Check of outdoor thermistors". |
| 23 | | 4 times | Lighting | Low discharge temperature protection | The frequency of the compressor is kept 80 Hz or more and the discharge temperature is kept under 102°F (39°C) for more than 20 minutes. | • Refer to 10-5.Ⓖ "Check of LEV".<br>• Check refrigerant circuit and refrigerant amount. |
| 24 | | 5 times | Lighting | Cooling high-pressure protection | The outdoor heat exchanger temperature exceeds 136°F (58 °C) during operation. | • This symptom does not mean any abnormality of the product, but check the following points.<br>• Check if indoor filters are clogged.<br>• Check if refrigerant is short.<br>• Check if indoor/outdoor unit air circulation is short cycled. |
| 25 | Outdoor unit operates | 9 times | Lighting | Inverter check mode | The unit is operated with emergency operation switch. | – |
| 26 | | Lighting | Lighting | Normal | – | – |

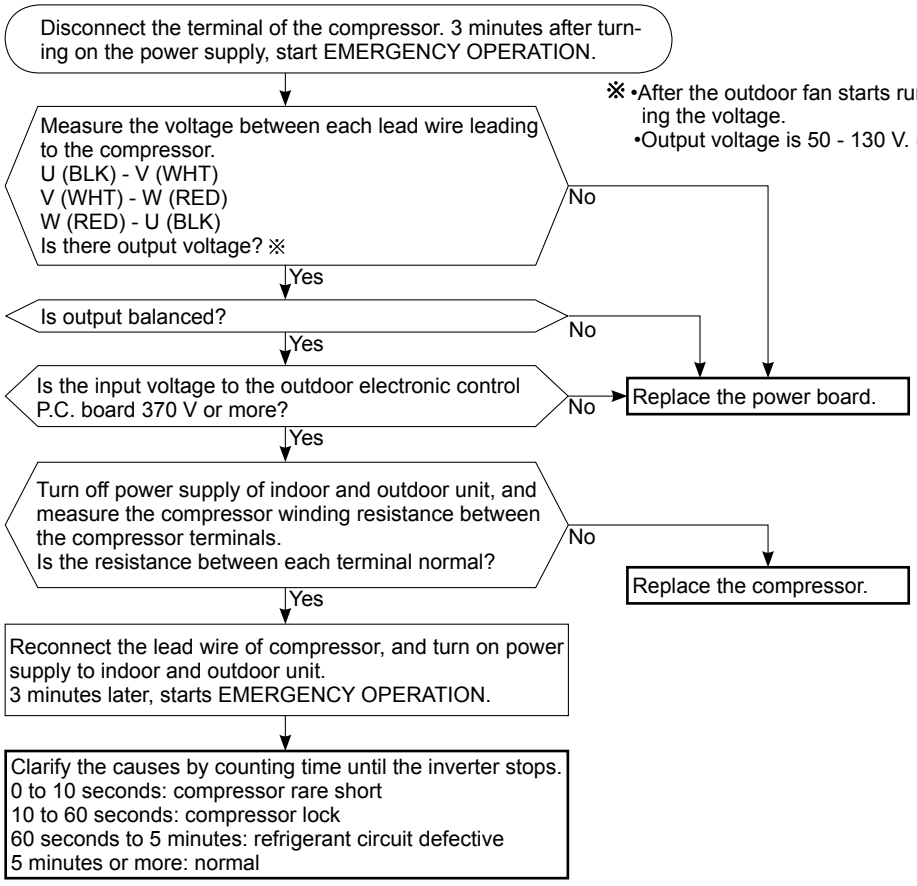
### 10-4. TROUBLE CRITERION OF MAIN PARTS

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

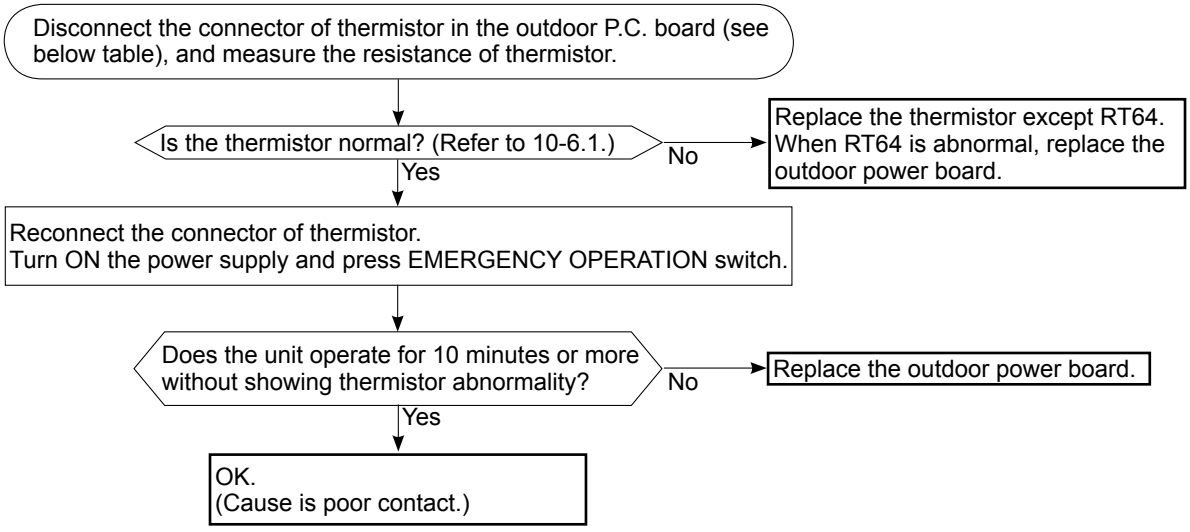
<table>
<tr><th>Part name</th><th>Check method and criterion</th><th>Figure</th></tr>
<tr><td>Defrost thermistor (RT61) (MUZ)<br><br>Ambient temperature thermistor (RT65)<br><br>Outdoor heat exchanger temperature thermistor (RT68)<br><br>Fin temperature thermistor (RT64)</td><td>Measure the resistance with a tester.<br><br>Refer to 10-6. “Test point diagram and voltage”, 1. “Outdoor electronic control P.C. board”, for the chart of thermistor.</td><td></td></tr>
<tr><td>Discharge temperature thermistor (RT62)</td><td>Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up.<br><br>Refer to 10-6. “Test point diagram and voltage”, 1. “Outdoor electronic control P.C. board”, for the chart of thermistor.</td><td></td></tr>
<tr><td>Compressor</td><td>Measure the resistance between terminals using a tester.<br>(Temperature: 14 ~ 104°F (-10 ~ 40°C))<br><table><tr><th>Normal</th></tr><tr><td>1.24 ~ 1.53 Ω</td></tr></table></td><td> 
</td></tr>
<tr><td>Outdoor fan motor</td><td>Measure the resistance between lead wires using a tester.<br>(Temperature: 14 ~ 104°F (-10 ~ 40°C))<br><table><tr><th>Color of lead wire</th><th>Normal</th></tr><tr><td>RED – BLK</td><td rowspan="3">13 ~ 16 Ω</td></tr><tr><td>BLK – WHT</td></tr><tr><td>WHT – RED</td></tr></table></td><td> 
</td></tr>
<tr><td>R. V. coil (MUZ)</td><td>Measure the resistance using a tester.<br>(Temperature: 14 ~ 104°F (-10 ~ 40°C))<br><table><tr><th>Normal</th></tr><tr><td>1.20 ~ 1.55 kΩ</td></tr></table></td><td></td></tr>
<tr><td>Linear expansion valve</td><td>Measure the resistance using a tester.<br>(Temperature: 14 ~ 104°F (-10 ~ 40°C))<br><table><tr><th>Color of lead wire</th><th>Normal</th></tr><tr><td>WHT – RED</td><td rowspan="4">38 ~ 50 Ω</td></tr><tr><td>RED – ORN</td></tr><tr><td>YLW – BRN</td></tr><tr><td>BRN – BLU</td></tr></table></td><td> 
</td></tr>
</table>

## 10-5. TROUBLESHOOTING FLOW

### Ⓐ How to check inverter/compressor


Disconnect the terminal of the compressor. 3 minutes after turning on the power supply, start EMERGENCY OPERATION.
※ •After the outdoor fan starts running, wait for 1 minute or more before measuring the voltage.
•Output voltage is 50 - 130 V. (The voltage may differ according to the tester.)
Measure the voltage between each lead wire leading to the compressor.
U (BLK) - V (WHT)
V (WHT) - W (RED)
W (RED) - U (BLK)
Is there output voltage? ※
No
Yes
Is output balanced?
No
Yes
Is the input voltage to the outdoor electronic control P.C. board 370 V or more?
No
Replace the power board.
Yes
Turn off power supply of indoor and outdoor unit, and measure the compressor winding resistance between the compressor terminals.
Is the resistance between each terminal normal?
No
Replace the compressor.
Yes
Reconnect the lead wire of compressor, and turn on power supply to indoor and outdoor unit.
3 minutes later, starts EMERGENCY OPERATION.
Clarify the causes by counting time until the inverter stops.
0 to 10 seconds: compressor rare short
10 to 60 seconds: compressor lock
60 seconds to 5 minutes: refrigerant circuit defective
5 minutes or more: normal

## Ⓑ Check of outdoor thermistors

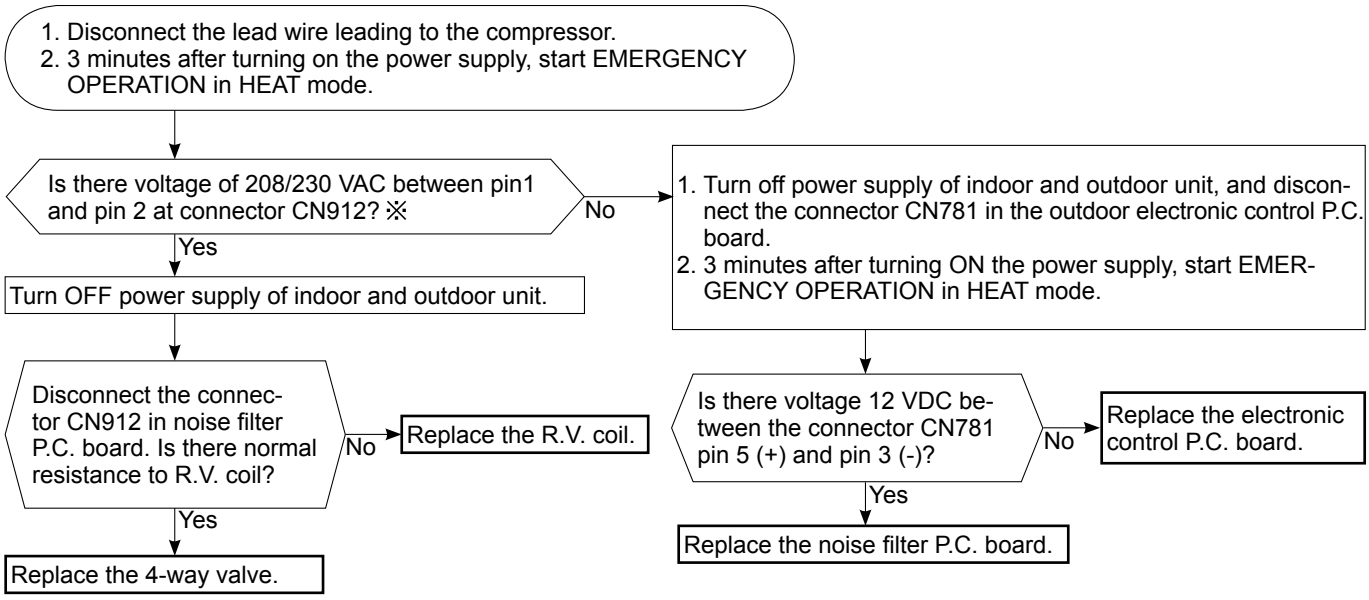

Disconnect the connector of thermistor in the outdoor P.C. board (see below table), and measure the resistance of thermistor.
Is the thermistor normal? (Refer to 10-6.1.)
No
Replace the thermistor except RT64. When RT64 is abnormal, replace the outdoor power board.
Yes
Reconnect the connector of thermistor.
Turn ON the power supply and press EMERGENCY OPERATION switch.
Does the unit operate for 10 minutes or more without showing thermistor abnormality?
No
Replace the outdoor power board.
Yes
OK.
(Cause is poor contact.)

| Thermistor | Symbol | Connector, Pin No. | Board |
|---|---|---|---|
| Defrost (**MUZ**) | RT61 | Between CN661 pin1 and pin2 | Outdoor electronic control P.C. board |
| Discharge temperature | RT62 | Between CN661 pin3 and pin4 | |
| Outdoor heat exchanger temperature | RT68 | Between CN661 pin7 and pin8 | |
| Ambient temperature | RT65 | Between CN663 pin1 and pin2 | |
| Fin temperature | RT64 | Between CN3 pin1 and pin2 | Outdoor power board |

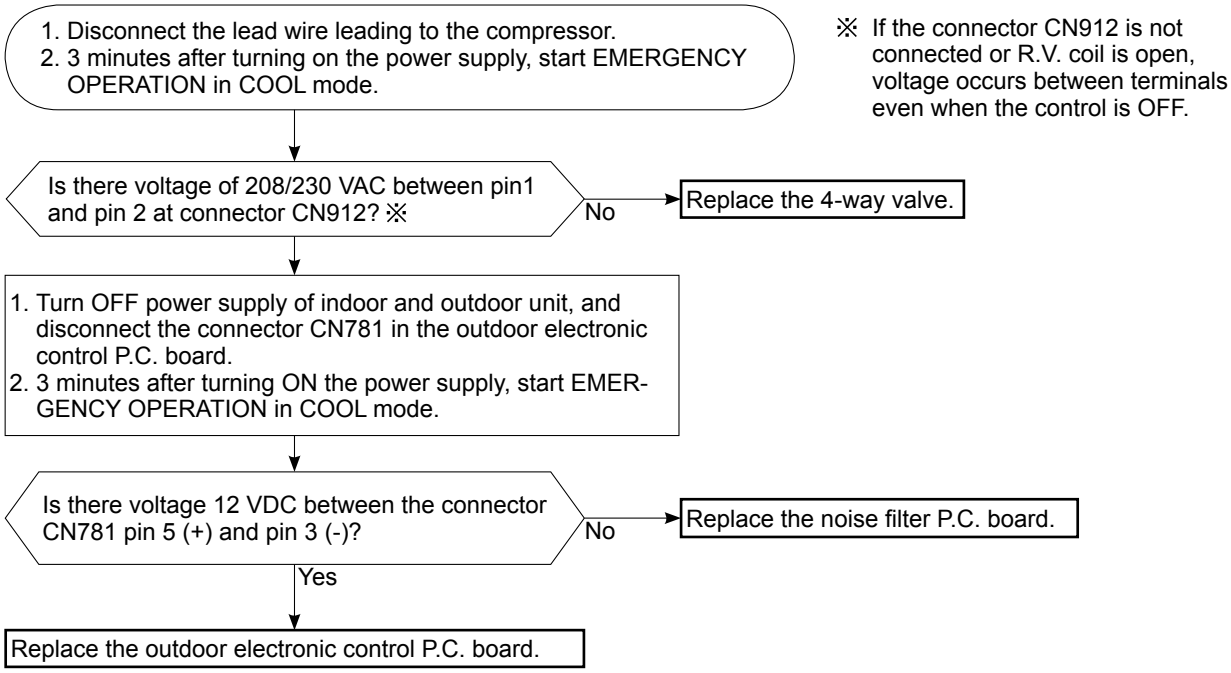
## Ⓒ Check of R.V. coil

**MUZ-D30/36**

**• Heating operation does not work.**

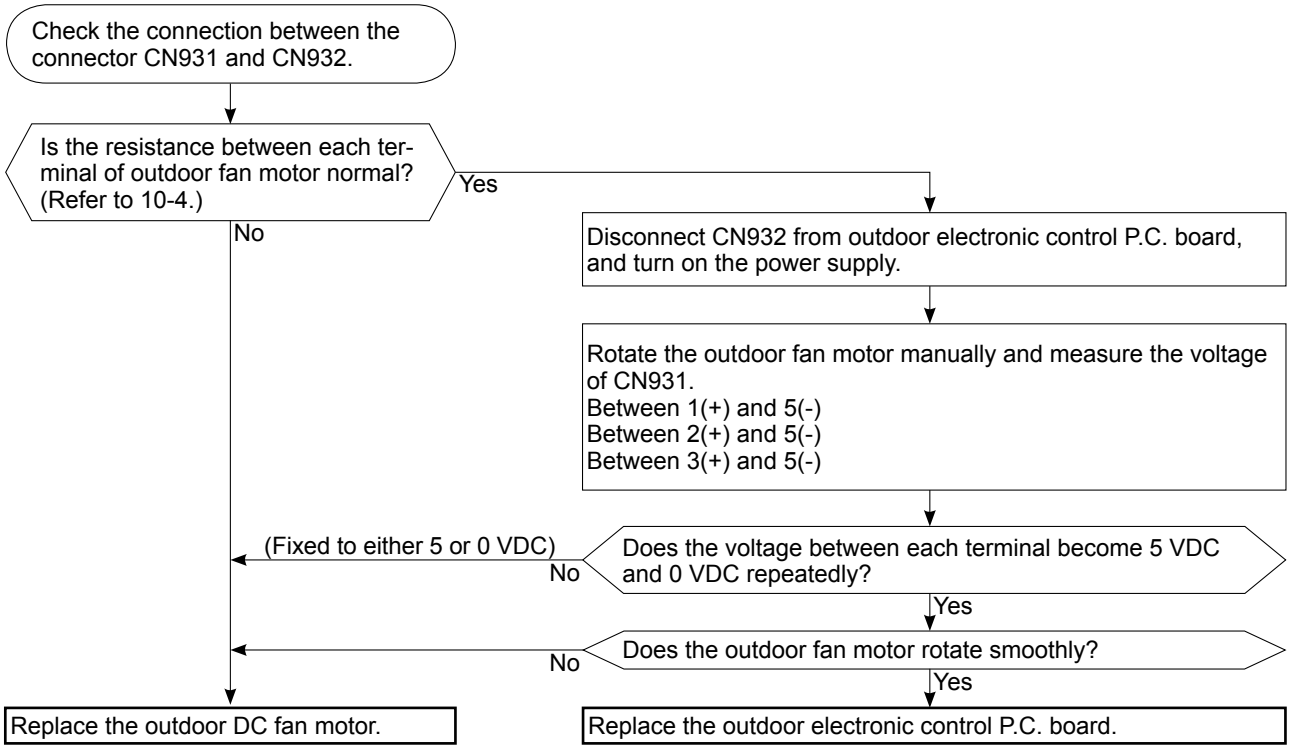

1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in HEAT mode.
Is there voltage of 208/230 VAC between pin1 and pin 2 at connector CN912? ※
No
1. Turn off power supply of indoor and outdoor unit, and disconnect the connector CN781 in the outdoor electronic control P.C. board.
2. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION in HEAT mode.
Yes
Turn OFF power supply of indoor and outdoor unit.
Disconnect the connector CN912 in noise filter P.C. board. Is there normal resistance to R.V. coil?
No
Replace the R.V. coil.
Yes
Replace the 4-way valve.
Is there voltage 12 VDC between the connector CN781 pin 5 (+) and pin 3 (-)?
No
Replace the electronic control P.C. board.
Yes
Replace the noise filter P.C. board.

**• Cooling operation does not work.**

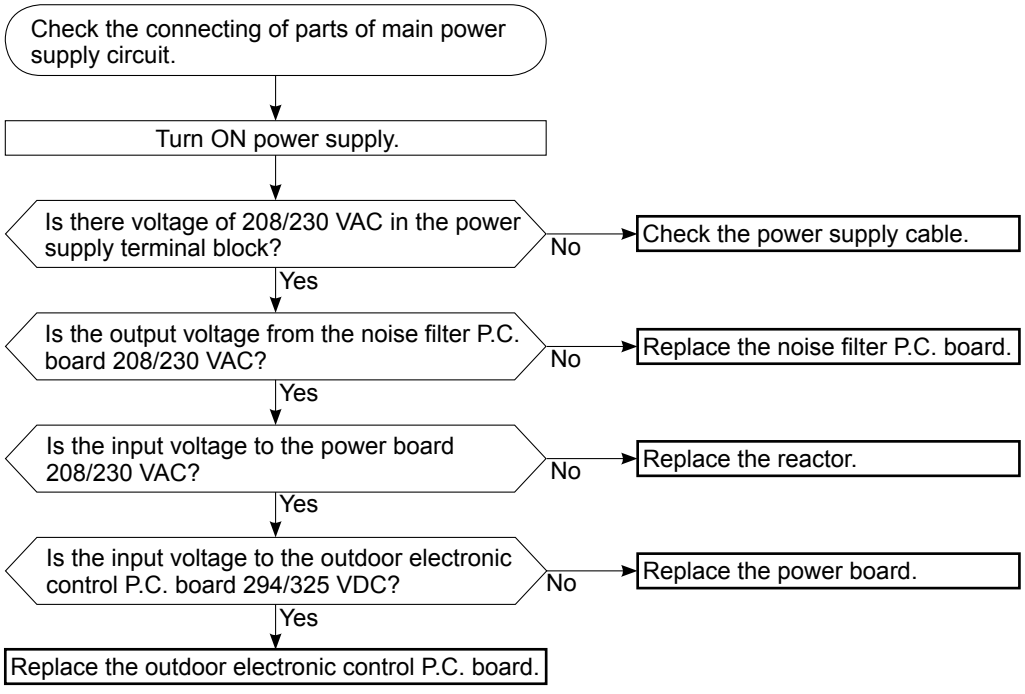

1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in COOL mode.
Is there voltage of 208/230 VAC between pin1 and pin 2 at connector CN912? ※
No
Replace the 4-way valve.
1. Turn OFF power supply of indoor and outdoor unit, and disconnect the connector CN781 in the outdoor electronic control P.C. board.
2. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION in COOL mode.
Is there voltage 12 VDC between the connector CN781 pin 5 (+) and pin 3 (-)?
No
Replace the noise filter P.C. board.
Yes
Replace the outdoor electronic control P.C. board.

※ If the connector CN912 is not connected or R.V. coil is open, voltage occurs between terminals even when the control is OFF.

## Ⓓ Check of outdoor fan motor


Check the connection between the connector CN931 and CN932.
Is the resistance between each terminal of outdoor fan motor normal? (Refer to 10-4.)
Yes
No
Disconnect CN932 from outdoor electronic control P.C. board, and turn on the power supply.
Rotate the outdoor fan motor manually and measure the voltage of CN931.
Between 1(+) and 5(-)
Between 2(+) and 5(-)
Between 3(+) and 5(-)
(Fixed to either 5 or 0 VDC)
No
Does the voltage between each terminal become 5 VDC and 0 VDC repeatedly?
Yes
No
Does the outdoor fan motor rotate smoothly?
Yes
Replace the outdoor DC fan motor.
Replace the outdoor electronic control P.C. board.

## Ⓔ Check of power supply


Check the connecting of parts of main power supply circuit.
Turn ON power supply.
Is there voltage of 208/230 VAC in the power supply terminal block?
No
Check the power supply cable.
Yes
Is the output voltage from the noise filter P.C. board 208/230 VAC?
No
Replace the noise filter P.C. board.
Yes
Is the input voltage to the power board 208/230 VAC?
No
Replace the reactor.
Yes
Is the input voltage to the outdoor electronic control P.C. board 294/325 VDC?
No
Replace the power board.
Yes
Replace the outdoor electronic control P.C. board.

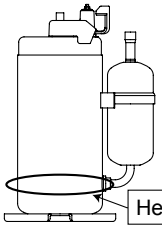
## Ⓕ Check of compressor start failure

Confirm that 1~4 is normal.
•Electrical circuit check
1. Contact of lead wire leading to compressor
2. Output voltage of the outdoor electronic control P.C. board and balance of them (See 10-5.Ⓐ)
3. Direct current voltage to the outdoor electronic control P.C. board
4. Voltage between outdoor terminal block S1-S2

Does the compressor run for 10 seconds or more after it starts?
- Yes → Check the refrigerant circuit. Check the stop valve.
- No →

After the compressor is heated with a drier, does the compressor start? ※1
- No → Replace the compressor.
- Yes →

Compressor start failure. Activate pre-heat control. (Refer to 9-1. "PRE-HEAT CONTROL")




※1
Heat the compressor with a drier for about 20 minutes. Do not recover refrigerant gas while heating.

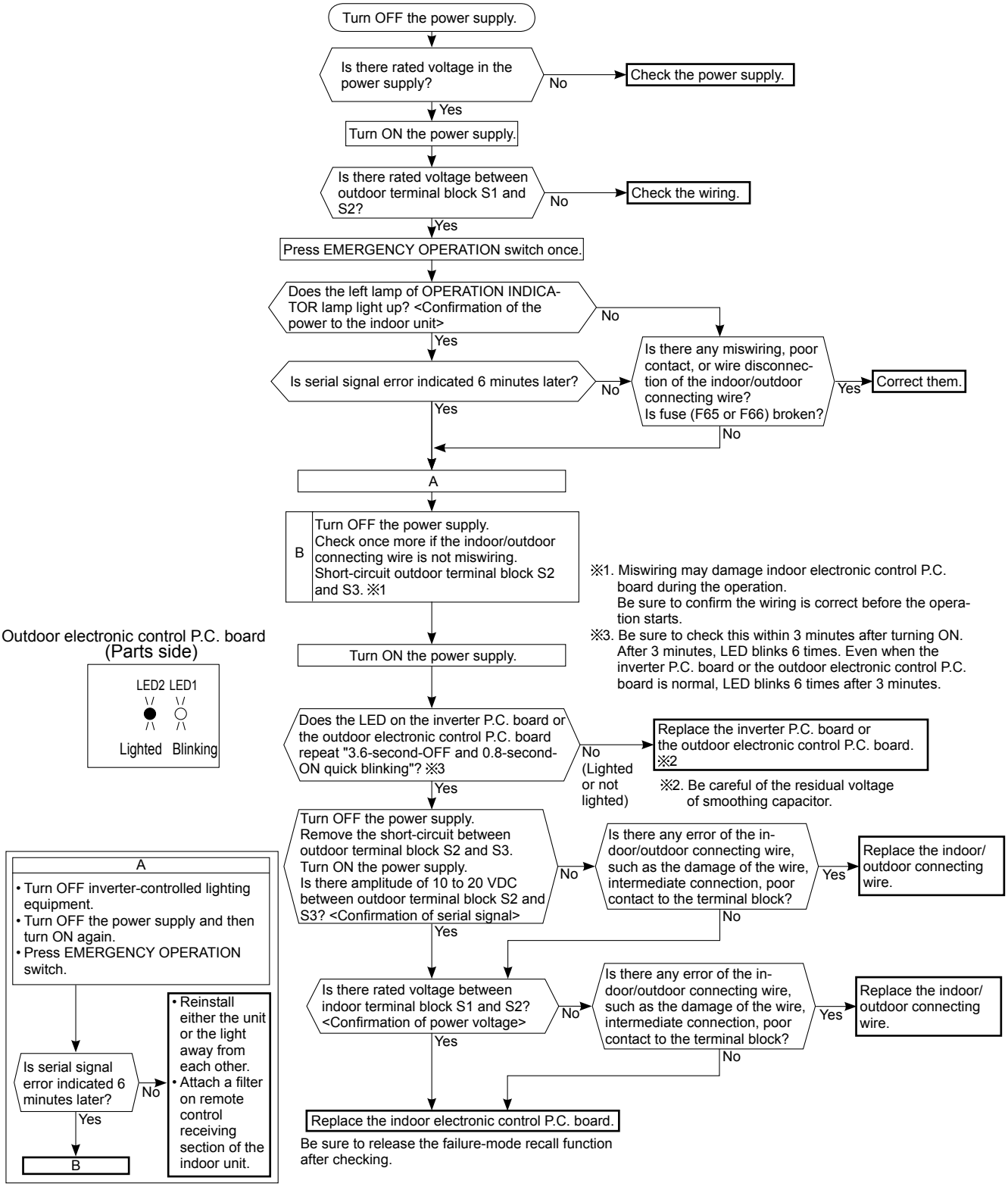
## ⒼCheck of LEV

Turn ON power supply to the outdoor unit after checking LEV coil is mounted to the LEV body securely.

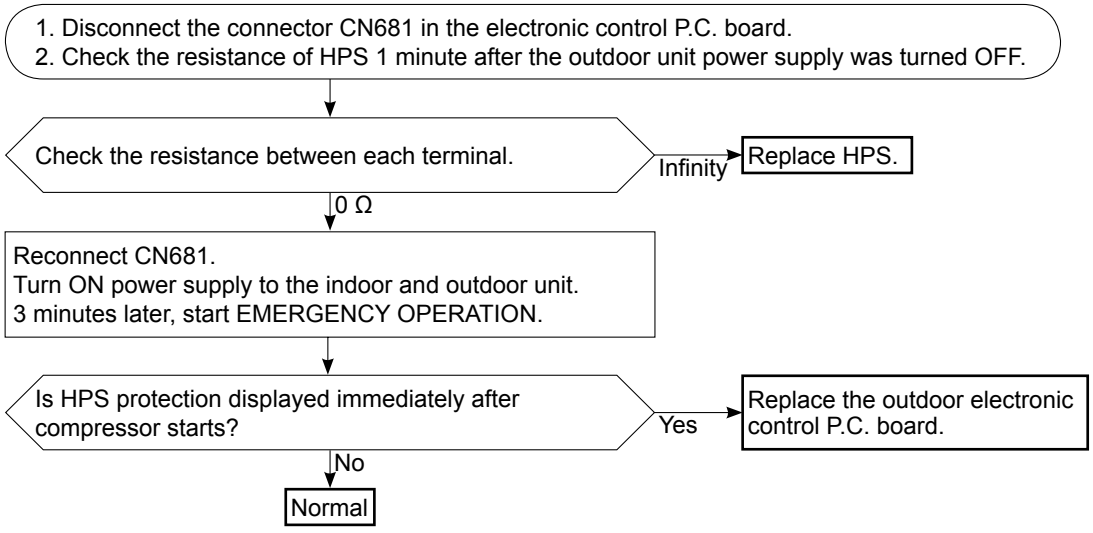
Is "click - click" sound heard? Or, do you feel vibration of the LEV coil with a hand?
- Yes → Normal
- No →

Disconnect the connector CN795. Is there normal resistance to LEV coil?
- Yes → Replace the outdoor electronic control P.C. board.
- No → Replace the LEV coil.

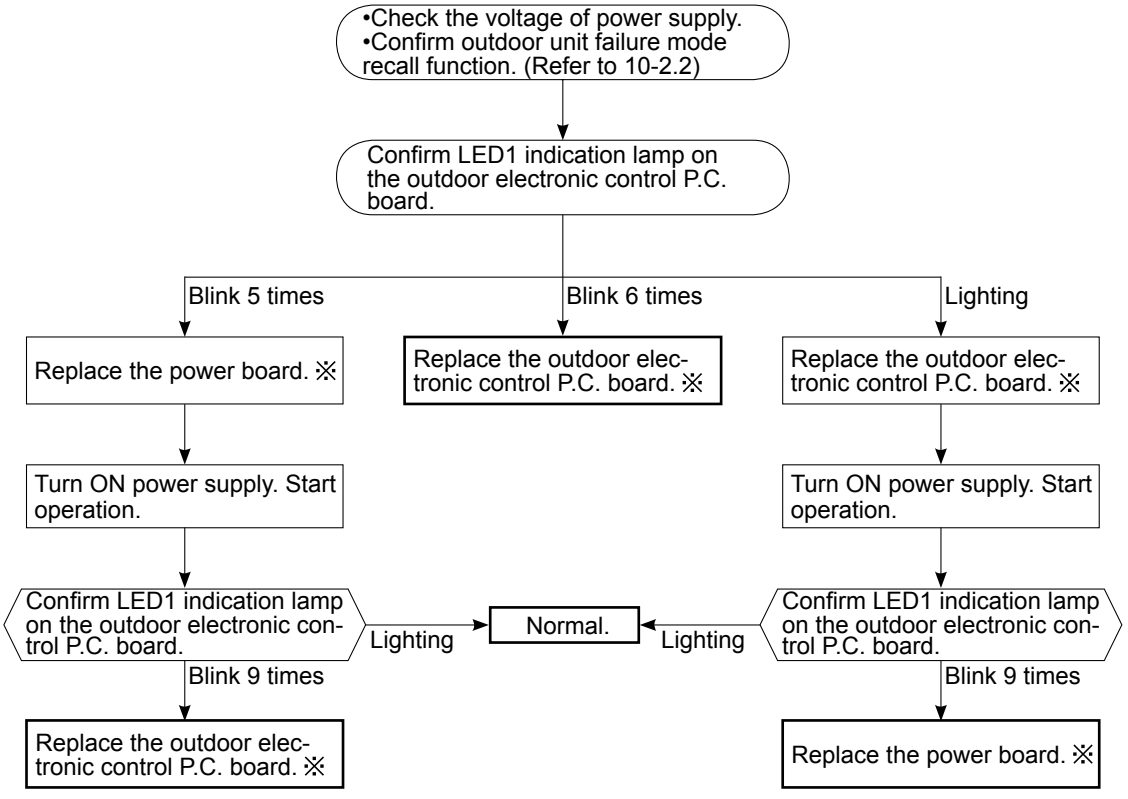
## Ⓗ How to check miswiring and serial signal error


Turn OFF the power supply.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Turn ON the power supply.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check the wiring.
Yes
Press EMERGENCY OPERATION switch once.
Does the left lamp of OPERATION INDICATOR lamp light up? <Confirmation of the power to the indoor unit>
No
Yes
Is serial signal error indicated 6 minutes later?
No
Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
Is fuse (F65 or F66) broken?
Yes
Correct them.
Yes
No
A
B
Turn OFF the power supply.
Check once more if the indoor/outdoor connecting wire is not miswiring.
Short-circuit outdoor terminal block S2 and S3. ※1
※1. Miswiring may damage indoor electronic control P.C. board during the operation.
Be sure to confirm the wiring is correct before the operation starts.
※3. Be sure to check this within 3 minutes after turning ON.
After 3 minutes, LED blinks 6 times. Even when the inverter P.C. board or the outdoor electronic control P.C. board is normal, LED blinks 6 times after 3 minutes.
Outdoor electronic control P.C. board
(Parts side)
LED2 LED1
Lighted Blinking
Turn ON the power supply.
Does the LED on the inverter P.C. board or the outdoor electronic control P.C. board repeat "3.6-second-OFF and 0.8-second-ON quick blinking"? ※3
No (Lighted or not lighted)
Replace the inverter P.C. board or the outdoor electronic control P.C. board. ※2
※2. Be careful of the residual voltage of smoothing capacitor.
Yes
Turn OFF the power supply.
Remove the short-circuit between outdoor terminal block S2 and S3.
Turn ON the power supply.
Is there amplitude of 10 to 20 VDC between outdoor terminal block S2 and S3? <Confirmation of serial signal>
No
Is there any error of the indoor/outdoor connecting wire, such as the damage of the wire, intermediate connection, poor contact to the terminal block?
Yes
Replace the indoor/outdoor connecting wire.
No
Yes
Is there rated voltage between indoor terminal block S1 and S2? <Confirmation of power voltage>
No
Is there any error of the indoor/outdoor connecting wire, such as the damage of the wire, intermediate connection, poor contact to the terminal block?
Yes
Replace the indoor/outdoor connecting wire.
No
Yes
Replace the indoor electronic control P.C. board.
Be sure to release the failure-mode recall function after checking.
A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light away from each other.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B

## Ⓘ Check of HPS

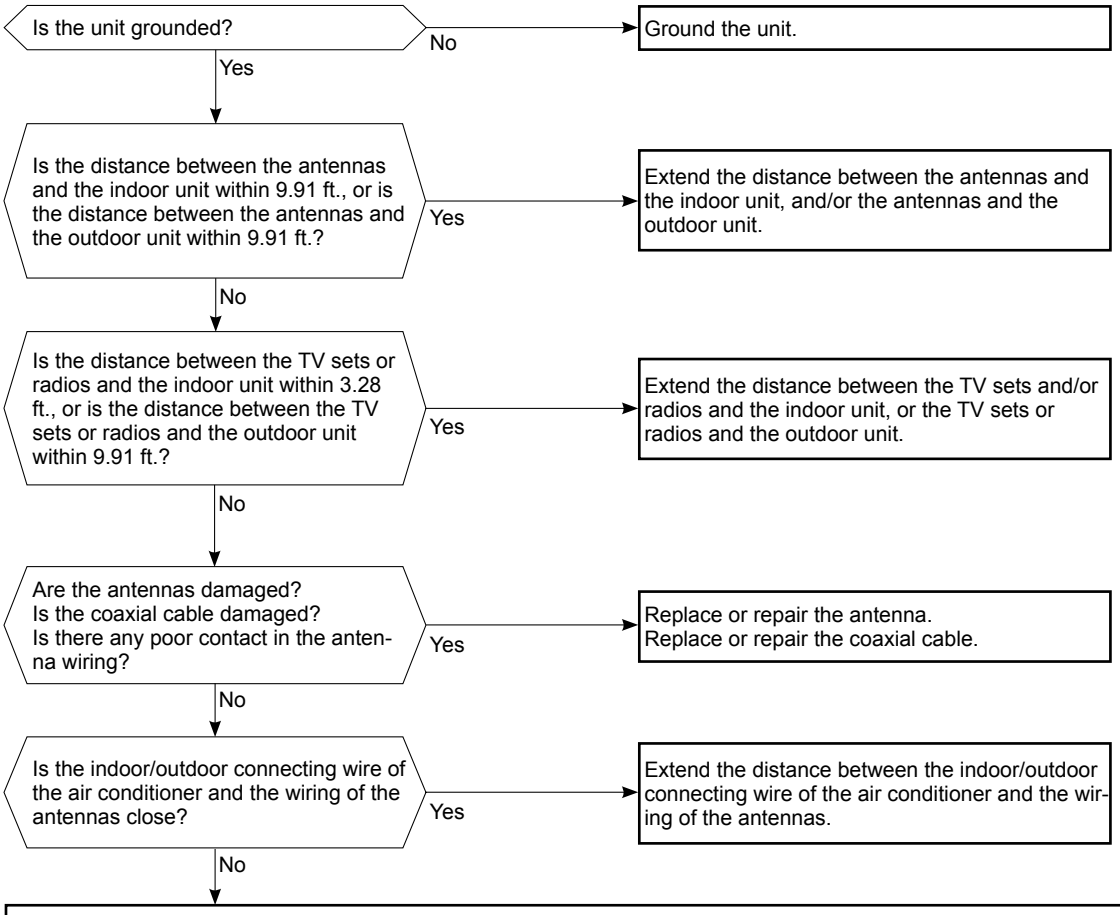

1. Disconnect the connector CN681 in the electronic control P.C. board.
2. Check the resistance of HPS 1 minute after the outdoor unit power supply was turned OFF.
Check the resistance between each terminal.
Infinity
Replace HPS.
0 Ω
Reconnect CN681.
Turn ON power supply to the indoor and outdoor unit.
3 minutes later, start EMERGENCY OPERATION.
Is HPS protection displayed immediately after compressor starts?
Yes
Replace the outdoor electronic control P.C. board.
No
Normal

## Ⓙ Check of bus-bar voltage


•Check the voltage of power supply.
•Confirm outdoor unit failure mode recall function. (Refer to 10-2.2)
Confirm LED1 indication lamp on the outdoor electronic control P.C. board.
Blink 5 times
Blink 6 times
Lighting
Replace the power board. ※
Replace the outdoor electronic control P.C. board. ※
Replace the outdoor electronic control P.C. board. ※
Turn ON power supply. Start operation.
Turn ON power supply. Start operation.
Confirm LED1 indication lamp on the outdoor electronic control P.C. board.
Lighting
Normal.
Lighting
Confirm LED1 indication lamp on the outdoor electronic control P.C. board.
Blink 9 times
Blink 9 times
Replace the outdoor electronic control P.C. board. ※
Replace the power board. ※

※ Turn OFF power supply before removing P.C. board.

## Ⓚ Electromagnetic noise enters into TV sets or radios


Is the unit grounded?
No
Ground the unit.
Yes
Is the distance between the antennas and the indoor unit within 9.91 ft., or is the distance between the antennas and the outdoor unit within 9.91 ft.?
Yes
Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.
No
Is the distance between the TV sets or radios and the indoor unit within 3.28 ft., or is the distance between the TV sets or radios and the outdoor unit within 9.91 ft.?
Yes
Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.
No
Are the antennas damaged?
Is the coaxial cable damaged?
Is there any poor contact in the antenna wiring?
Yes
Replace or repair the antenna.
Replace or repair the coaxial cable.
No
Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?
Yes
Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
No

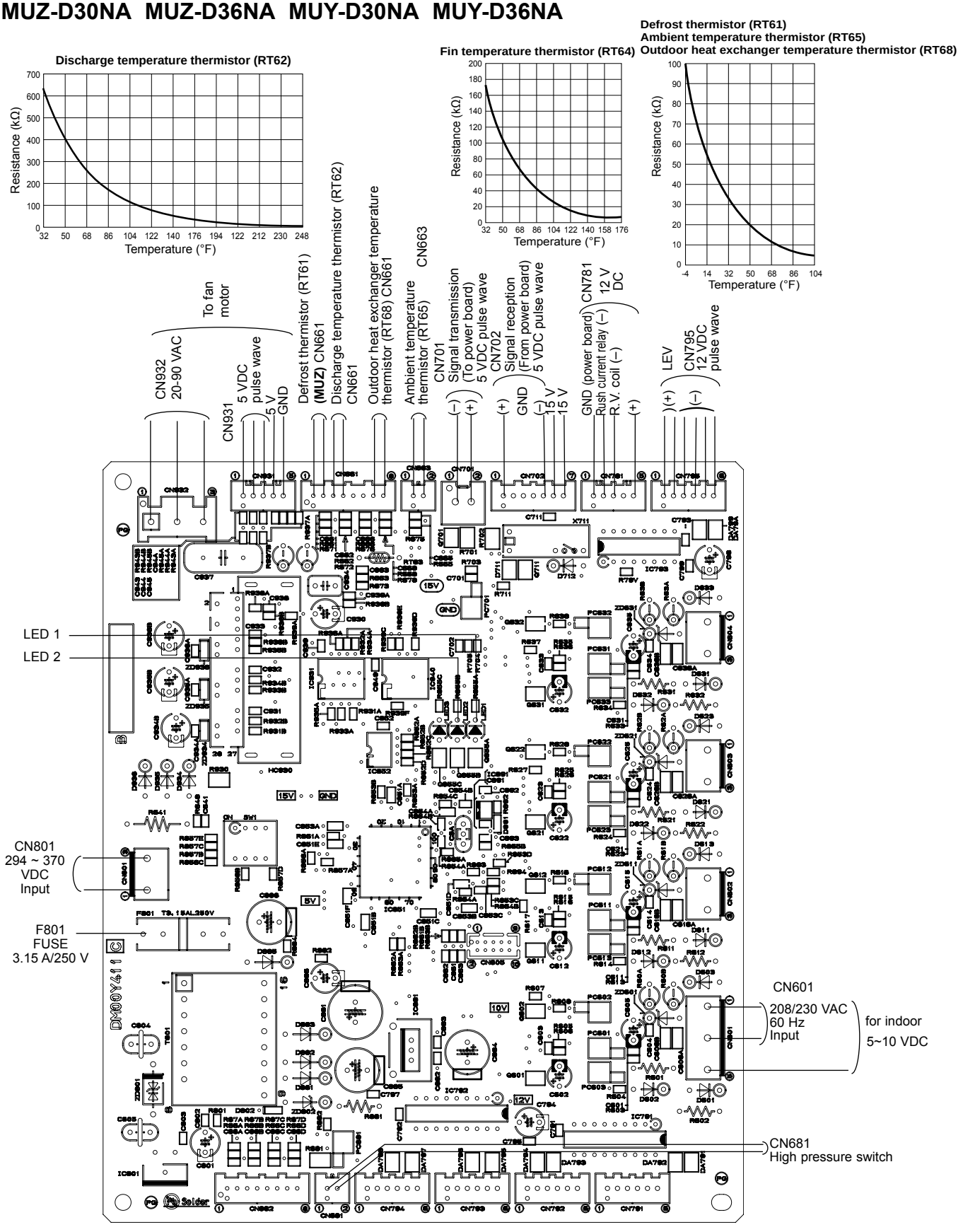
Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
Check the followings before asking for service.

1. Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, grounding wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

## 10-6. TEST POINT DIAGRAM AND VOLTAGE

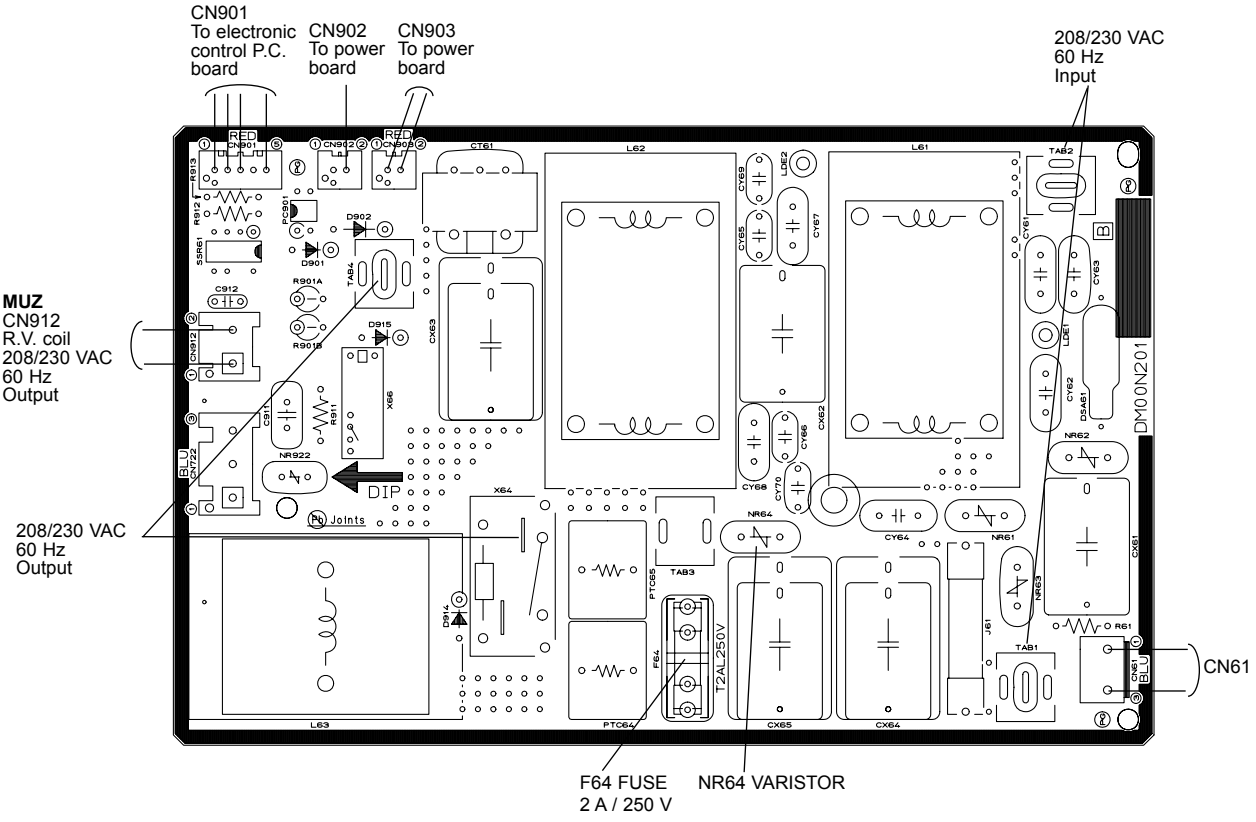
### 1. Outdoor electronic control P.C. board

### MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA



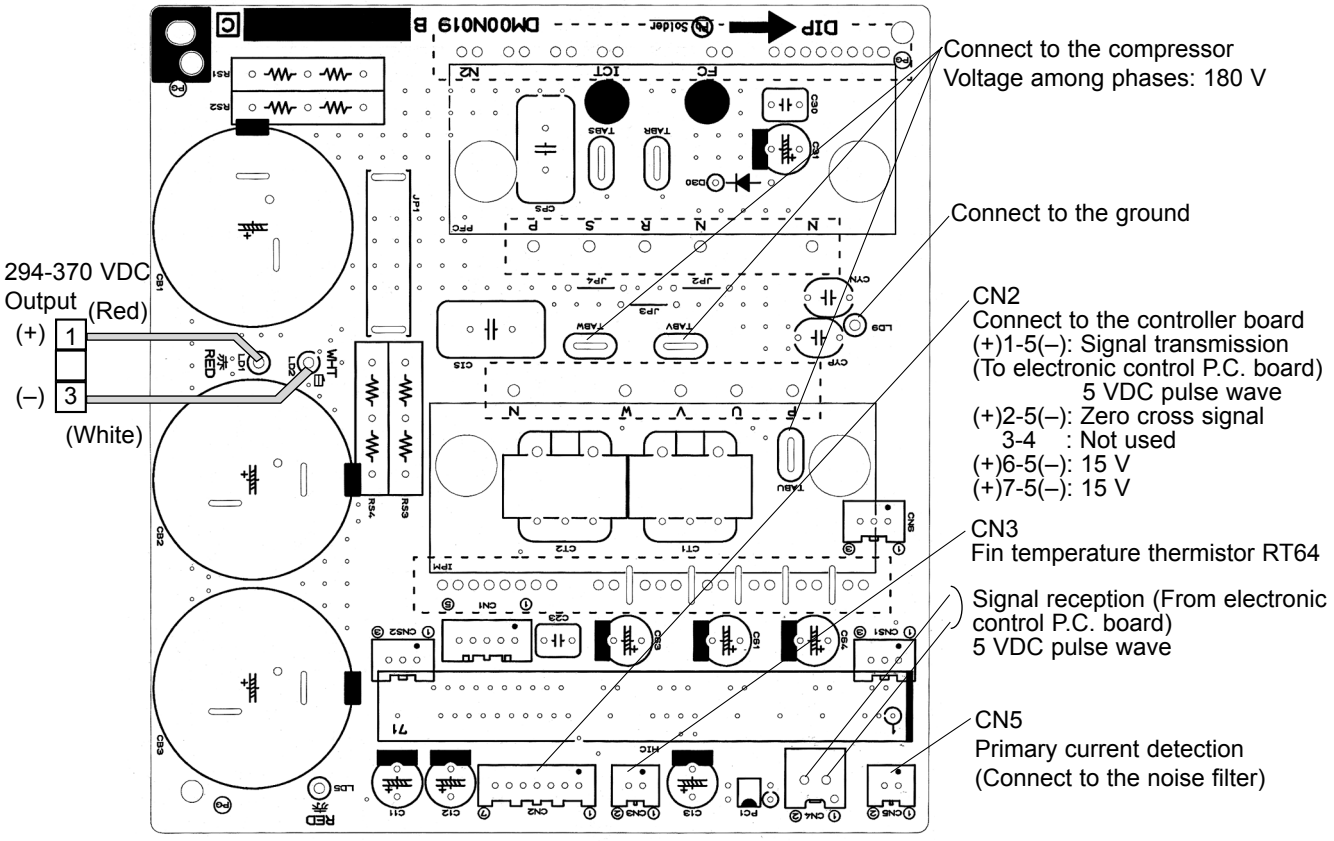
## 2. Noise filter P.C. board

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA



### 3. Outdoor power board

## MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA

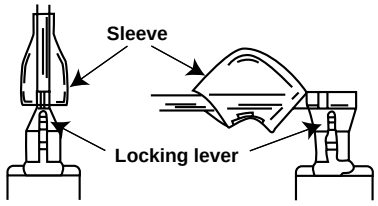


# 11 DISASSEMBLY INSTRUCTIONS

## <"Terminal with locking mechanism" Detaching points>

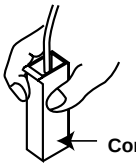
The terminal which has the locking mechanism can be detached as shown below.
There are two types (refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.




① Slide the sleeve.
② Pull the terminal while pushing the locking lever.

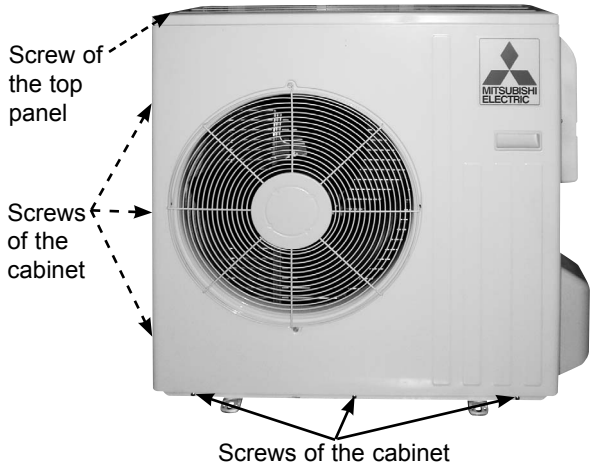
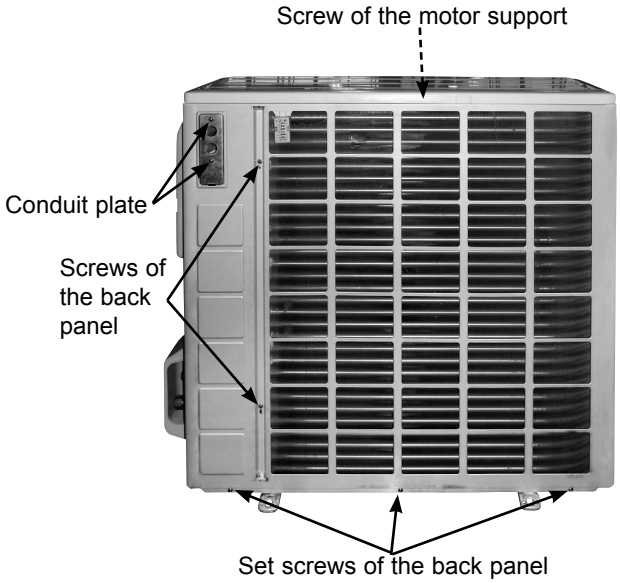
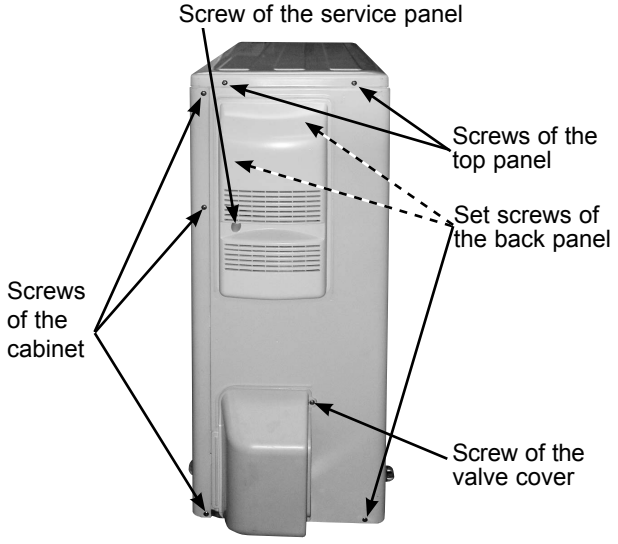
(2) The terminal with this connector has the locking mechanism.




① Hold the sleeve, and pull out the terminal slowly.

**MUZ-D30NA MUZ-D36NA MUY-D30NA MUY-D36NA**

**NOTE**: Turn OFF power supply before disassembling.

| OPERATING PROCEDURE | PHOTOS |
|---|---|
| **1. Removing the cabinet**<br>(1) Remove the screws of the service panel.<br>(2) Remove the screws of the top panel.<br>(3) Remove the screw of the valve cover.<br>(4) Remove the service panel.<br>(5) Remove the top panel.<br>(6) Remove the valve cover.<br>(7) Remove the screws of the cabinet.<br>(8) Remove the cabinet.<br>(9) Remove the screws of the back panel.<br>(10) Remove the back panel. | **Photo 1**<br>  <br> |
| **Photo 3**<br>  <br> | **Photo 2**<br>  <br> |

## OPERATING PROCEDURE

**2. Removing the inverter assembly, P.C. board and power board**

(1) Remove the top panel, cabinet, service panel and the back panel. (Refer to 1.)
(2) Disconnect the following connectors:
<Electronic control P.C. board>
CN931 and CN932 (Fan motor)
CN795 (LEV)
CN661 (Discharge temperature thermistor, defrost thermistor (MUZ) and outdoor heat exchanger temperature thermistor)
CN663 (Ambient temperature thermistor)
CN681 (High pressure switch) (MUZ)
<Noise filter P.C. board>
CN912 (4-way valve) (MUZ)
<Compressor>
<Reactor>
(4) Remove the screws fixing the relay panel.
(5) Remove the inverter assembly.
(6) Disconnect all connectors and lead wires on the electronic control P.C. board.
(7) Remove the electronic control P.C. board from the inverter assembly.
(8) Remove the screws fixing the power board assembly.
(9) Disconnect all connectors and lead wires on the power board.
(10) Remove the power board from the inverter assembly.
(11) Disconnect all connectors and lead wires on the noise filter P.C. board.
(12) Remove the noise filter P.C. board from the inverter assembly.

**3. Removing R.V. coil (MUZ)**

(1) Remove the top panel, cabinet, service panel and the back panel. (Refer to 1.)
(2) Disconnect the following connectors:
<Noise filter P.C. board>
CN912 (4-way valve)
(3) Remove the R.V. coil. (Photo 9)

## PHOTOS

**Photo 4**

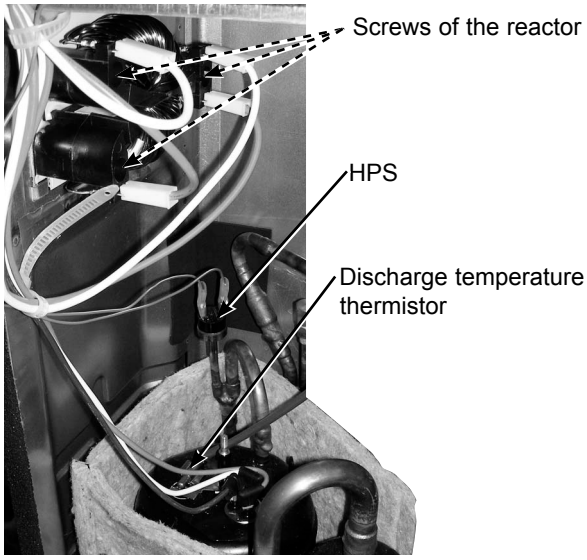



**Photo 5 (Inverter assembly)**

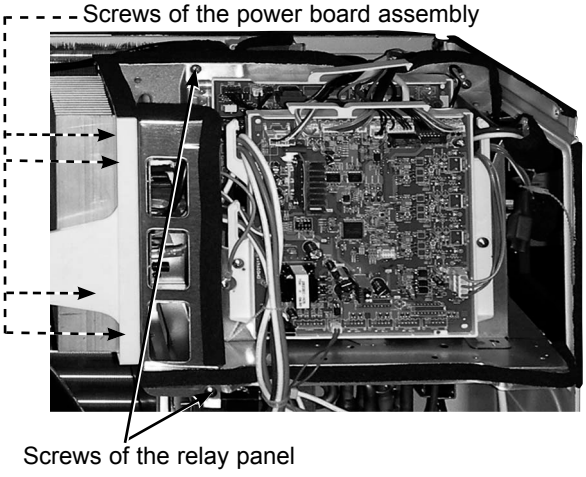
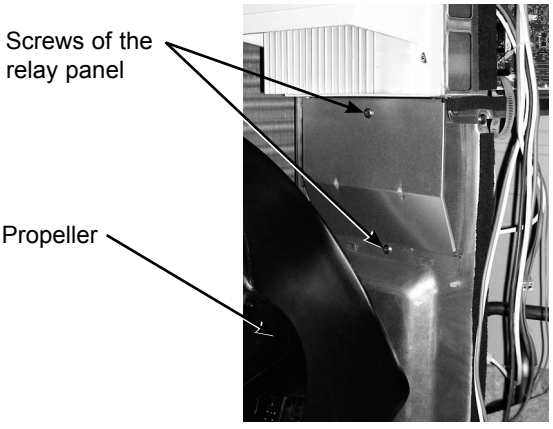
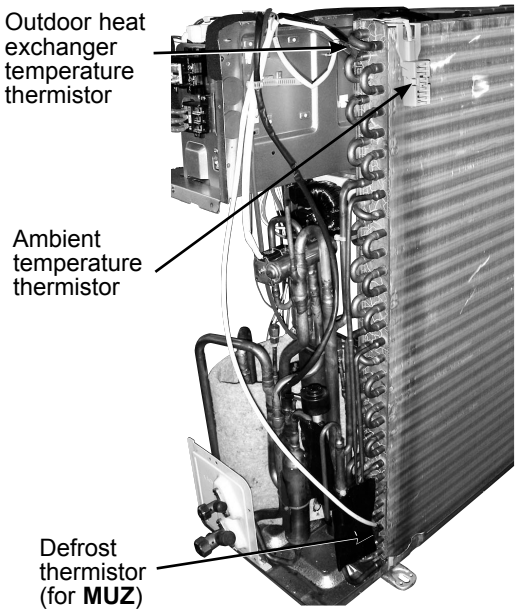
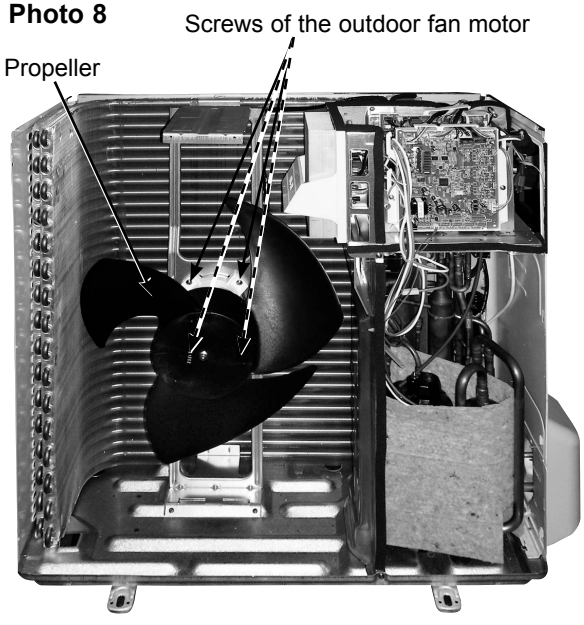
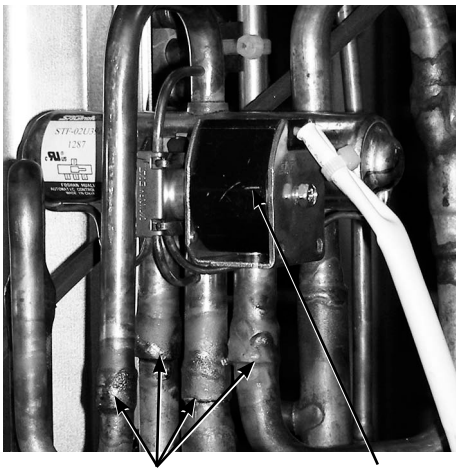
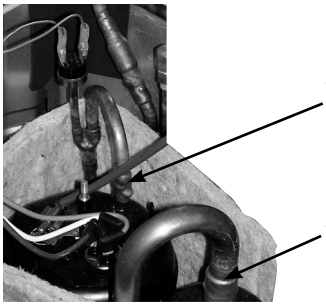



**Photo 6**



| OPERATING PROCEDURE | PHOTOS |
|---|---|
| **4. Removing the defrost thermistor (MUZ), discharge temperature thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor**<br>(1) Remove the top panel, cabinet, service panel and the back panel. (Refer to 1.)<br>(2) Disconnect the following connectors:<br><Electronic control P.C. board><br>CN661 (Discharge temperature thermistor, defrost thermistor (**MUZ**) and outdoor heat exchanger temperature thermistor)<br>CN663 (Ambient temperature thermistor)<br>(3) Pull out the defrost thermistor from its holder. (Photo 7) (**MUZ**)<br>(4) Pull out the discharge temperature thermistor from its holder. (Photo 4)<br>(5) Pull out the outdoor heat exchanger temperature thermistor from its holder. (Photo 7)<br>(6) Pull out the ambient temperature thermistor from its holder. (Photo 7) | **Photo 7**<br>  <br> |
| **5. Removing outdoor fan motor**<br>(1) Remove the top panel, cabinet, service panel and the back panel. (Refer to 1.)<br>(2) Disconnect the following connectors:<br><Electronic control P.C. board><br>CN931 and CN932 (Fan motor)<br>(3) Remove the propeller.<br>(4) Remove the screws fixing the outdoor fan motor.<br>(5) Remove the outdoor fan motor. | **Photo 8**<br>  <br> |

| OPERATING PROCEDURE | PHOTOS |
|---|---|
| **6. Removing the compressor and 4-way valve**<br>(1) Remove the top panel, cabinet, service panel and the back panel. (Refer to 1.)<br>(2) Remove the inverter assembly. (Refer to 2.)<br>(3) Remove the R.V. coil. (Refer to 3.)<br>(4) Recover gas from the refrigerant circuit.<br>**NOTE:** Recover gas from the pipes until the pressure gauge shows 0 PSIG.<br>(5) Detach the welded part of the suction and the discharge pipe connected with compressor. (Photo 9)<br>(6) Remove the compressor nuts.<br>(7) Remove the compressor.<br>(8) Detach the welded part of 4-way valve and pipe. (Photo 8) | **Photo 9**<br>  <br>Welded parts of 4-way valve R.V. coil<br>**Photo 10**<br>  <br>Welded part of the discharge pipe<br>Welded part of the suction pipe |
| **7. Removing the reactor**<br>(1) Remove the top panel, cabinet, service panel and the back panel. (Refer to 1.)<br>(2) Disconnect the reactor lead wire.<br>(3) Remove the screws of the reactor, and remove the reactor. | |

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